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*Indicates a free-standing minor

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<td>Russian B.A.</td>
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<td>Sociology B.A.</td>
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<td>Sociology B.S.</td>
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<td>Sociology Minor</td>
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<td>Sociology of Law, Criminology, and Deviance B.A.</td>
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<td>Speech-Language-Hearing Sciences B.A.</td>
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<td>Statistical Practice B.A.</td>
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<td>Strategic Communication: Advertising and Public Relations B.A.</td>
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<td>Studies in Cinema and Media Culture B.A.</td>
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<td>Studies in Cinema and Media Culture Minor</td>
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<td>Swedish Minor</td>
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<td>Theatre Arts Minor</td>
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<td>World Music Minor*</td>
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<td><strong>College of Science and Engineering</strong></td>
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<td>Aerospace Engineering and Mechanics B.A.E.M.</td>
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<tr>
<td>Astrophysics B.S.Astrop.</td>
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<td>Biomedical Engineering B.Bm.E.</td>
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<td>Bioproductions and Biosystems Engineering B.B.E.</td>
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<td>Ecological Engineering Minor</td>
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<td>Electrical Engineering B.E.E.</td>
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<td>Environmental Engineering B.Env.E</td>
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<td>Environmental Geosciences B.S.</td>
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<td>Geoengineering B.GeoE.</td>
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<td>Industrial and Systems Engineering B.I.Sy.E.</td>
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<td>Information Technology Minor*</td>
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<td>Materials Science and Engineering B.Mat.S.E.</td>
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<td>Mathematics B.S.Math.</td>
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<td>Physics B.S. Phys.</td>
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<td>Accounting B.S.B.</td>
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<td>Account Minor</td>
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<td>Business Analytics*</td>
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<td>Business Law Minor*</td>
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<tr>
<td>Business of Healthcare Minor*</td>
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<td>Entrepreneurial Management B.S.B.</td>
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<td>Entrepreneurial Management Minor</td>
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<td>Finance &amp; Risk Management Insurance B.S.B.</td>
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<td>Program</td>
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<td>Human Resources and Industrial Relations B.S.B.</td>
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<td>Human Resources and Industrial Relations Minor</td>
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<td>International Business B.S.B.</td>
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<td>Management Minor*</td>
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<td>Public &amp; Nonprofit Management B.S.B.</td>
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<td>Risk Management and Insurance Minor</td>
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<td>Strategic Management Minor*</td>
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<td>Supply Chain &amp; Operations Management B.S.B.</td>
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<td>School of Dentistry</td>
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<td>Dental Hygiene B.S.D.H</td>
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<td>College of Design</td>
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<td>Apparel Design B.S.</td>
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<td>Architecture B.D.A.</td>
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<td>Architecture B.S.</td>
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<td>Architecture Minor</td>
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<td>Fashion Studies Minor*</td>
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<td>Graphic Design B.F.A.</td>
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<td>Housing and Community Development Minor</td>
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<td>Program</td>
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<td>Interdisciplinary Design Minor*</td>
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<td>Interior Design B.S.</td>
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<td>Interior Environments Minor*</td>
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<td>Landscape Design and Planning B.E.D.</td>
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<td>Landscape Design and Planning Minor</td>
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<tr>
<td>Lighting Design Minor*</td>
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<td>Product Design B.S.</td>
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<td>Public Interest Design Minor*</td>
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<td>Retail Merchandising B.S.</td>
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<td>Retail Merchandising Minor</td>
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<td>Hubert H. Humphrey School of Public Affairs</td>
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<td>Election Administration Undergraduate Certificate</td>
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<td>Medical School</td>
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<td>Mortuary Science B.S.</td>
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<tr>
<td>School of Nursing</td>
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<td>Nursing B.S.N.</td>
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<td>Academic Health Center Shared</td>
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<td>Medical Laboratory Sciences Certificate</td>
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Twin Cities Campus

Behavioral Biology Minor

Ecology, Evolution & Behavior

College of Biological Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 19
- N/A

Behavioral biology is the scientific discipline that aims to understand all aspects of the biological bases of animal behavior. These aspects include the causal mechanisms underlying behaviors (i.e., genetic, hormonal, neuronal, neuromodulatory, and sensory mechanisms), changes in behaviors over the animal's lifetime (i.e., during development or through learning), the adaptive value of behaviors (i.e., their contribution to survival and reproduction), and the evolutionary history of behaviors (i.e., how they change over evolutionary timescales). Consequently, the range of disciplines informing the study of behavioral biology is exceedingly broad and includes cell and developmental biology, endocrinology, ecology, economics, evolution, genetics, neuroscience, physiology, and psychology. Basic research in behavioral biology informs a diverse array of applied sciences, from conservation biology, to robotics, animal science, biomedical science, and veterinary medicine. Consistent with this breadth, the behavioral biology minor is an interdisciplinary curriculum through which students learn foundational concepts of behavioral biology, and gain perspectives about basic and applied issues involving the biology of animal behavior. Students will have the flexibility to tailor coursework to meet their own professional and career goals. Through a combination of courses, laboratories, and research opportunities, students who complete the minor will gain knowledge and skills that will enrich their lives and provide a base for subsequent work or study in the many fields touched by behavioral biology.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 1 courses before admission to the program.

- A GPA above 2.0 is preferred for the following:
  - 2.00 already admitted to the degree-granting college

Students who have a cumulative GPA of 2.0 or better and have completed the Behavioral Biology Core course (EEB 3411, or EEB 3412W, or EEB 3811) with a C- or better will be eligible to declare the minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Behavioral Biology Prerequisites

These courses are prerequisite coursework for the course options in the Behavioral Biology Core.

BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)

BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

The following courses provide broad overviews of behavioral biology. One of these courses must be taken to satisfy the core requirement of the minor. A grade of C- or better in the course is required for admission into the minor.

Take 1 or more course(s) from the following:
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
- EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
- EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)

Minor Requirements

Various seminar-style courses (e.g., honors seminars, freshman seminars, graduate seminars) are offered that are directly related to behavioral biology. Students may petition the Director of the Behavioral Biology minor to count up to two of these seminar credits toward completion of the minor. Unit-specific seminars and colloquia (e.g., the EEB Departmental Seminar or the Neuroscience Colloquium) will not be considered.
Behavioral Biology Elective Requirement

Students must complete 6 credits (minimum 2 courses) of behavioral biology-related courses from the following list of electives. Approval of additional or substitution elective courses will be made by the Director of the Undergraduate Minor in consultation with the advisory committee.

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
- ANTH 5009 - Human Behavioral Biology (3.0 cr)
- ANTH 5112 - Reconstructing Hominin Behavior (3.0 cr)
- EEB 4330W - Animal Communication [WI] (3.0 cr)
- ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- NSCI 3505 - Mind and Brain (3.0 cr)
- NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- PSY 3011 - Introduction to Learning and Behavior (3.0 cr)
- PSY 3061 - Introduction to Biological Psychology (3.0 cr)
- PSY 5064 - Brain and Emotion (3.0 cr)
- ANTH 3015W - Biology, Evolution, and Cultural Development of Language & Music [SOC, WI] (3.0 cr)
  or ANTH 5015W - Biology, Evolution, and Cultural Development of Language & Music [SOC, WI] (3.0 cr)
- ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
- ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
  or EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)

Research Experience in Behavioral Biology Requirement

Using established course designators for Directed Research and Directed Studies in CBS, CLA, or CFANS, students will gain experience conducting hands-on or literature-based research focusing on basic or applied aspects of behavioral biology. Approval is granted by the director of the undergraduate minor. Students completing projects in CFANS or CLA should have their work approved for the minor by the program's director of undergraduate studies, Dr. Mark Bee, then contact CBS Student Services.

Take 2 or more credit(s) from the following:

- BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOC 4994 - Directed Research (1.0 - 7.0 cr)
- BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOL 4994 - Directed Research (1.0 - 7.0 cr)
- EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4993 - Directed Studies (1.0 - 7.0 cr)
- EEB 4994 - Directed Research (1.0 - 7.0 cr)
- GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4993 - Directed Studies (1.0 - 7.0 cr)
- GCD 4994 - Directed Research (1.0 - 7.0 cr)
- MICB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4993 - Directed Studies (1.0 - 7.0 cr)
- MICB 4994 - Directed Research (1.0 - 7.0 cr)
- NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
- NSCI 4994 - Directed Research (1.0 - 6.0 cr)
- PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4993 - Directed Studies (1.0 - 7.0 cr)
- PMB 4994 - Directed Research (1.0 - 7.0 cr)
Twin Cities Campus
Biochemistry B.S.
Biochemistry, Molecular Biology, & Biophysics TCBS
College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 71 to 86
- Degree: Bachelor of Science

Biochemists study molecules found in living organisms, particularly proteins, nucleic acids, lipids, and carbohydrates. Biochemistry majors focus their studies on the biosynthesis, metabolism, function, and regulation of these molecules of life. This information is essential to gain an understanding of many biological processes, including how diseases like cancer and diabetes develop, and to learn how genetic engineering and biotechnology can be used in ways that benefit society.

Earning a BS in biochemistry prepares majors for graduate study in biochemistry or other biological sciences, professional training programs in the health sciences, careers in teaching, and entry-level positions in industries, agencies, and universities.

Biochemistry is an experimental science, and majors, especially those planning to pursue graduate studies in the field, should become acquainted with laboratory research approaches beyond those in the formal lab courses. Research options are available through BIOC 4994 or BIOC 4794W. Students should consult early with their faculty mentor to begin planning the research component of their major.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 14 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research

- BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
- BIOL 1806 - Nature of Life, Part Two (0.5 cr)
- BIOL 2905 - Nature of Life, Part III (0.5 cr)
- BIOL 2906 - Nature of Life, Part IV (0.5 cr)

or This track (BIOL 3001) is for transfer students only.
- BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology

- BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements
MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)  
or MATH 1271 - Calculus I [MATH] (4.0 cr)  
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)  
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)  
Take 1 or more course(s) from the following:  
• CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)  
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)  
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)  
• MATH 1272 - Calculus II (4.0 cr)  
• MATH 1572H - Honors Calculus II (4.0 cr)  
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)  
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)  
• BIOL 3272 - Applied Biostatistics (4.0 cr)  
or BIOL 3272H - Applied Biostatistics (4.0 cr)  
or BIOL 5272 - Applied Biostatistics (4.0 cr)  

Chemistry:  
Track 1: Preferred CBS Chemistry Sequence  
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)  
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)  
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)  
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)  
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)  

or Track 2  
This track is allowable for students entering CBS with previous chemistry credit, or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.  
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)  
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)  
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)  
CHEM 2301 - Organic Chemistry I (3.0 cr)  
CHEM 2302 - Organic Chemistry II (3.0 cr)  

or Track 2 (Honors Option)  
This track is allowable for CBS honors students.  
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)  
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)  
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)  
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)  
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)  
CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)  

Physics  
PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)  
or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)  
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)  
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)  
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)  
or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)  
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)  
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)  

Molecular and Cellular Biology  
Molecular Biology  
BIOL 3015 - Molecular Biology (2.0 cr)  
or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)  
BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)  
BIOL 4003 - Genetics (3.0 cr)  

Ecology, Evolution, and Biodiversity  
Take 1 or more course(s) from the following:  
• EEB 3807 - Ecology (4.0 cr)  
• EEB 3407 - Ecology (3.0 cr)  
• EEB 3408W - Ecology [WI] (4.0 cr)  
• MICB 3301 - Biology of Microorganisms (5.0 cr)  
• EEB 3409 - Evolution (3.0 cr)  
or EEB 5409 - Evolution (3.0 cr)
Biochemistry Major-specific Courses

Biochemistry Core

- **BIOC 4332** - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
- **BIOC 4025W** - Laboratory in Biochemistry [WI] (2.0 cr)
- **BIOC 4521** - Introduction to Physical Biochemistry (3.0 cr)
  or **CHEM 4501** - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
- **CHEM 4502** - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)

Upper Division Biochemistry Electives

Take 1 or more course(s) from the following:
- **BIOC 4351** - Protein Engineering (3.0 cr)
- **BIOC 5213** - Selected Topics in Molecular Biology (3.0 cr)
- **BIOC 5216** - Current Topics in Signal Transduction (2.0 cr)
- **BIOC 5309** - Biocatalysis and Biodegradation (3.0 cr)
- **BIOC 5352** - Biotechnology and Bioengineering for Biochemists (3.0 cr)
- **BIOC 5361** - Microbial Genomics and Bioinformatics (3.0 cr)
- **BIOC 5444** - Muscle (3.0 cr)
- **BIOC 5528** - Spectroscopy and Kinetics (4.0 cr)
- **BIOC 5535** - Introduction to Modern Structural Biology - Diffraction (2.0 cr)
- **BIOC 5536** - Introduction to Modern Structural Biology - Nuclear Magnetic Resonance (2.0 cr)
- **MPHY 5040** - Introduction to Medical Physics (3.0 cr)
- **MPHY 5160** - Advanced Radiation Physics and Dosimetry (3.0 cr)

Upper Division Lab

Take 1 or more course(s) from the following:
- **BIOC 4125** - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- **BIOC 4225** - Laboratory in NMR Techniques (1.0 cr)
- **BIOC 4325** - Laboratory in Mass Spectrometry (1.0 cr)
- **CHEM 4423W** - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
- **GCD 4025** - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
- **GCD 5005** - Computer Programming for Biology (3.0 cr)
- **MICB 4215** - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- **MICB 4225W** - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- **MICB 4325** - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)

Students may use a maximum of 7 credits of directed research toward a CBS degree. A minimum of two credits of research must be taken to count for the requirement.

Upper Division Life Sciences Electives

Take 6 or more course(s) from the following:
- **BIOC 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 4994** - Directed Research (1.0 - 7.0 cr)
- **BIOC 5794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 5994** - Directed Research (1.0 - 7.0 cr)
- **MICB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **MICB 4994** - Directed Research (1.0 - 7.0 cr)
- **MICB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **MICB 4994** - Directed Research (1.0 - 7.0 cr)
- **NSCI 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- **NSCI 4994** - Directed Research (1.0 - 6.0 cr)
- **PMB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **PMB 4994** - Directed Research (1.0 - 7.0 cr)
- **MICB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **MICB 4994** - Directed Research (1.0 - 7.0 cr)
- **NSCI 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- **NSCI 4994** - Directed Research (1.0 - 6.0 cr)
- **PMB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **PMB 4994** - Directed Research (1.0 - 7.0 cr)

Upper Division Life Sciences Electives

Take 6 or more course(s) from the following:
- **BIOC 4351** - Protein Engineering (3.0 cr)
- **BIOC 5213** - Selected Topics in Molecular Biology (3.0 cr)
- **BIOC 5216** - Current Topics in Signal Transduction (2.0 cr)
- **BIOC 5309** - Biocatalysis and Biodegradation (3.0 cr)
- **BIOC 5352** - Biotechnology and Bioengineering for Biochemists (3.0 cr)
- **BIOC 5361** - Microbial Genomics and Bioinformatics (3.0 cr)
- **BIOC 5444** - Muscle (3.0 cr)
- **BIOC 5528** - Spectroscopy and Kinetics (4.0 cr)
- **BIOC 5535** - Introduction to Modern Structural Biology - Diffraction (2.0 cr)
- **BIOC 5536** - Introduction to Modern Structural Biology - Nuclear Magnetic Resonance (2.0 cr)
- **BIOL 3211** - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 3610 - Internship: Professional Experience in Biological Sciences (1.0 - 6.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
• BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
• CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
• CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• EEB 3407 - Ecology (3.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3807 - Ecology (4.0 cr)
• EEB 5221 - Molecular Evolution (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
• MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
• MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
• MICE 5035 - Personal Microbiome Analysis (3.0 cr)
• MPHY 5040 - Introduction to Medical Physics (3.0 cr)
• MPHY 5106 - Advanced Radiation Physics and Dosimetry (3.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PMB 4131 - Prokaryotic Genetics (3.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• EEB 3409 - Evolution (3.0 cr)
or EEB 5409 - Evolution (3.0 cr)
• BIOC 5960 - Special Topics in Biochemistry (3.0 cr)
or BIOC 4960 - Special Topics in Biochemistry (3.0 cr)
• Take 0 - 1 course(s) from the following:
  - GCC 3xxx
  - GCC 5xxx

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
• COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4005W - Cell Biology-Writing Intensive [WI] (4.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Integrated BS/MPH-Environmental Health
The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of at least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus
Biochemistry Minor
Biochemistry, Molecular Biology, & Biophysics TCBS
College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 28 to 35

Biochemists study molecules found in living organisms, particularly proteins, nucleic acids, lipids, and carbohydrates. Biochemistry minors focus their studies on the biosynthesis, metabolism, function, and regulation of these molecules of life. This information is essential to gain an understanding of many biological processes, including how diseases like cancer and diabetes develop, and how genetic engineering and biotechnology can be used in ways that benefit society.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Most courses for the minor require a course in general biology. Please check individual course options for other prerequisites.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite courses
These courses are prerequisites to the first course in the minor, BIOC 4331.

BIOL 1009 - General Biology [BIOL] (4.0 cr)
  or Foundations of Biology
  BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
  or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
  BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
  BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
  or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)

Track 1
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
  or Track 2
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)
  or Honors Chemistry Track
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Minor Requirements
Students who wish to declare a minor in biochemistry can do so online at the College of Biological Sciences website.

Credits earned in prerequisite courses count towards the minor's 28 to 35 total required credits.
Minor Courses

BIOC 3021 - Biochemistry (3.0 cr)  
or BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)  
or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)  
BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)  
BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)

Biochemistry Course Options

Take 2 or more credit(s) from the following:

• BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)  
• BIOC 4225 - Laboratory in NMR Techniques (1.0 cr)  
• BIOC 4325 - Laboratory in Mass Spectrometry (1.0 cr)  
• BIOC 4351 - Protein Engineering (3.0 cr)  
• BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)  
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)  
• BIOC 4994 - Directed Research (1.0 - 7.0 cr)  
• BIOC 5213 - Selected Topics in Molecular Biology (3.0 cr)  
• BIOC 5216 - Current Topics in Signal Transduction (2.0 cr)  
• BIOC 5309 - Biocatalysis and Biodegradation (3.0 cr)  
• BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)  
• BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)  
• BIOC 5444 - Muscle (3.0 cr)  
• BIOC 5528 - Spectroscopy and Kinetics (4.0 cr)  
• BIOC 5535 - Introduction to Modern Structural Biology -- Diffraction (2.0 cr)  
• BIOC 5536 - Introduction to Modern Structural Biology - Nuclear Magnetic Resonance (2.0 cr)  
• MPH 5040 - Introduction to Medical Physics (3.0 cr)  
• MPH 5160 - Advanced Radiation Physics and Dosimetry (3.0 cr)
Twin Cities Campus

Biology B.S.

College of Biological Sciences - Adm

Program Type: Baccalaureate

Requirements for this program are current for Fall 2020

- Required credits to graduate with this degree: 120
- Required credits within the major: 74 to 83
- Degree: Bachelor of Science

Students majoring in biology gain a broad understanding of the fundamental nature and characteristics of living things and the ways in which they interact. Their studies cover the full range of life sciences, from cancer genes to acid rain, and from lichens to marine mammals.

The biology BS program prepares students for study in a broad spectrum of biological sciences, professional training programs in the health sciences, careers in teaching, and entry-level scientist positions in industry, government agencies, and universities.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Students completing another major in the College of Biological Sciences are not eligible for the BS in biology. In addition, students completing a degree in biology are not eligible for the following CBS minors, due to overlap: behavioral biology, biochemistry, cellular and molecular neuroscience, integrative neuroscience, microbiology, and plant biology.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

At least 16 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses

Nature of Life/Nature of Science and Research

- BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
- BIOL 1806 - Nature of Life, Part Two (0.5 cr)
- BIOL 2905 - Nature of Life, Part III (0.5 cr)
- BIOL 2906 - Nature of Life, Part IV (0.5 cr)

or This track (BIOL 3001) is for transfer students only.

- BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology

- BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements

- MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Take 1 or more course(s) from the following:
• CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
• MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (4.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
or Track 2
This track is allowable for students entering CBS with previous chemistry credit or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
or Track 2 (Honors Option)
This track is allowable for CBS honors students.
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Physics

PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401W - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402W - Honors Physics II [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

Molecular Biology
BIOL 3015 - Molecular Biology (2.0 cr)
or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)

Ecology, Evolution, and Biodiversity
Courses cannot fulfill both the ecology, evolution, and biodiversity requirements and a major elective requirement.
Take 2 or more course(s) from the following:
Organismal Biology
Take 1 or more course(s) from the following:
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
  BIOL 2005 - Animal Diversity Laboratory (2.0 cr)

• Ecology, Evolution, and Behavior
  Take 1 or more course(s) from the following:
  • EEB 3807 - Ecology (4.0 cr)
  • EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
  • EEB 3407 - Ecology (3.0 cr)
  • EEB 3408W - Ecology [WI] (4.0 cr)
  • EEB 3411 - Introduction to Animal Behavior (3.0 cr)
  • EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
  • EEB 3409 - Evolution (3.0 cr)
  or EEB 5409 - Evolution (3.0 cr)

Biology Major-Specific Coursework
BIOL 2005 must be paired with 3211 to count for elective credit.

Take 1 or more course(s) from the following:

Laboratory and Field Courses
  Electives must include 2 lab/field courses from the approved list. To count as a lab/field course, directed research must be a minimum of 3 credits; credits can be split over multiple terms using 4994, 4794W, or a combination. Students may use a maximum of 7 credits of directed research toward a CBS degree. Directed research can only be used for one lab/field course. In order to count toward the lab/field course, Itasca courses (48xx) must be 2 credits or greater.

  Take 2 or more course(s) from the following:
  • BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
  • BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
  • BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
  • BIOC 4994 - Directed Research (1.0 - 7.0 cr)
  • BIOC 4596 - Coral Reef Ecology (Dive Trip) (2.0 cr)
  • BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
  • BIOC 4994 - Directed Research (1.0 - 7.0 cr)
  • CFAN 3502 - Bahamas--Tropical Marine Biology and Shark Ecology (2.0 cr)
  • CFAN 3510 - From Rainforest to Reef: Wildlife Medicine and Conservation in Belize (3.0 cr)
  • COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
  • COP 4994 - Directed Research (1.0 - 7.0 cr)
  • EEB 3407 - Ecology (3.0 cr)
  • EEB 3408W - Ecology [WI] (4.0 cr)
  • EEB 3411 - Introduction to Animal Behavior (3.0 cr)
  • EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
  • EEB 3807 - Ecology (4.0 cr)
  • EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
  • EEB 4129 - Mammalogy (4.0 cr)
  • EEB 4134 - Introduction to Ornithology (4.0 cr)
  • EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
  • EEB 4839 - Field Studies in Mammalogy (4.0 cr)
  • EEB 4844 - Field Ornithology (4.0 cr)
  • EEB 4994 - Directed Research (1.0 - 6.0 cr)
  • EEB 5605 - Limnology Laboratory (2.0 cr)
  • ENT 5361 - Aquatic Insects (4.0 cr)
  • FW 4136 - Ichthyology (4.0 cr)
  • GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
  • GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
  • GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
  • GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
  • GCD 4994 - Directed Research (1.0 - 7.0 cr)
  • MICB 3301 - Biology of Microorganisms (5.0 cr)
  • MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
  • MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
  • MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
  • MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
  • MICB 4994 - Directed Research (1.0 - 7.0 cr)
  • NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
  • NSCI 4994 - Directed Research (1.0 - 6.0 cr)
  • PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
  • PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
  • PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 7.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 3205 - Animal Diversity Laboratory (2.0 cr)
• EEB 3409 - Evolution (3.0 cr)
or EEB 5409 - Evolution (3.0 cr)
• PMB 3802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
or PMB 5802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
• PMB 3812 - Field Mycology (3.0 cr)
or PMB 5812 - Field Mycology (3.0 cr)

Additional Electives
Take 0 - 13 credit(s) from the following:
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
• BIOC 4185 - Laboratory in Molecular Genetics (3.0 cr)
• BIOC 4225 - Laboratory in NMR Techniques (1.0 cr)
• BIOC 4325 - Laboratory in Mass Spectrometry (1.0 cr)
• BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
• BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
• BIOC 4351 - Protein Engineering (3.0 cr)
• BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4960 - Special Topics in Biochemistry (3.0 cr)
• BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOC 4994 - Directed Research (1.0 - 7.0 cr)
• BIOC 5213 - Selected Topics in Molecular Biology (3.0 cr)
• BIOC 5309 - Biocatalysis and Biodegradation (3.0 cr)
• BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
• BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
• BIOC 5527 - Introduction to Modern Structural Biology (4.0 cr)
• BIOC 5528 - Spectroscopy and Kinetics (4.0 cr)
• BIOC 5535 - Introduction to Modern Structural Biology -- Diffraction (2.0 cr)
• BIOC 5536 - Introduction to Modern Structural Biology - Nuclear Magnetic Resonance (2.0 cr)
• BIOC 5560 - Special Topics in Biochemistry (3.0 cr)
• BIOC 5580 - Understanding the Evolution-Creationism Controversy [CIV] (3.0 cr)
•BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
• BIOL 3503 - Biology of Aging (2.0 cr)
• BIOL 3600 - Directed Instruction (1.0 - 2.0 cr)
• BIOL 3610 - Internship: Professional Experience in Biological Sciences (1.0 - 6.0 cr)
• BIOL 3700 - Undergraduate Seminar (1.0 - 3.0 cr)
• BIOL 4201 - Teaching in the Biology Laboratory (1.0 cr)
• BIOL 4580 - Coral Reef Ecology (2.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4850 - Special Topics in Biology (1.0 - 5.0 cr)
• BIOL 4950 - Special Topics in Biology (1.0 - 4.0 cr)
• BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOL 4994 - Directed Research (1.0 - 7.0 cr)
• BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
• BIOL 5407 - Ecology (3.0 cr)
• BIOL 5409 - Evolution (3.0 cr)
• BIOL 5950 - Special Topics (1.0 - 4.0 cr)
• CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
• COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
• COP 4993 - Directed Studies (1.0 - 7.0 cr)
• EEB 3407 - Ecology (3.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3409 - Evolution (3.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3500 - Special Topics in Ecology, Evolution and Behavior (1.0 - 3.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 3701 - EEB Seminar (1.0 cr)
• EEB 3807 - Ecology (4.0 cr)
• EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3829 - Primate Ecology and Social Behavior (3.0 cr)
• EEB 3830W - Animal Communication [WI] (3.0 cr)
• EEB 4068 - Plant Physiological Ecology (3.0 cr)
• EEB 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 4611 - Biogeochemical Processes (3.0 cr)
• EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4993 - Directed Studies (1.0 - 7.0 cr)
• EEB 4994 - Directed Research (1.0 - 6.0 cr)
• GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
• GCD 3486 - Personal Genome Analysis (4.0 cr)
• GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4993 - Directed Studies (1.0 - 7.0 cr)
• GCD 4994 - Directed Research (1.0 - 6.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
• MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
• MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
• MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• NIC 5500 - Survey of Biomedical Neuroscience (2.0 cr)
• NIC 5551 - Itasca Cell and Molecular Neurobiology Laboratory (4.0 cr)
• NIC 5555 - Systems Neuroscience (4.0 cr)
• NIC 5661W - Behavioral Neuroscience [WI] (4.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
• NSCI 4105 - Neurobiology Laboratory I (3.0 cr)

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Information current as of September 02, 2020
• NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
• NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
• NSCI 4994 - Directed Research (1.0 - 6.0 cr)
• PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 3500 - Special Topics in Plant Biology (1.0 - 3.0 cr)
• PMB 3701 - PMB Seminar (1.0 cr)
• PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PMB 4131 - Prokaryotic Genetics (3.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4601 - Topics in Plant Biochemistry (3.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 7.0 cr)
• PMB 5516 - Plant Cell Biology (3.0 cr)
• PMB 5601 - Topics in Plant Biochemistry (3.0 cr)
• PMB 5960 - Special Topics (1.0 - 3.0 cr)
• PMB 5501 - Biology of Microorganisms (5.0 cr)
• PHIL 3301 - Biology of Microorganisms (3.0 cr)
• EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  or ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
  or PHSL 5444 - Muscle (3.0 cr)
• PMB 4412 - Plant Physiology (3.0 cr)
  or PMB 5412 - Plant Physiology (3.0 cr)
• EEB 3534 - Biodiversity Science: The origins, maintenance, consequences, detection & assessment of biodiversity [ENV] (3.0 cr)
  or EEB 5534 - Biodiversity Sci: The origins, maintenance, consequences, detection and assessment of biodiversity [ENV] (3.0 cr)
• PMB 5212 - Fungi - A Kingdom of Their Own (3.0 cr)
  or PMB 5212 - Fungi - A Kingdom of Their Own (3.0 cr)
• Biology in Context
  Take 0 - 4 credit(s) from the following:
  • NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
  • NSCI 3505 - Mind and Brain (3.0 cr)
• GCC 3xxx
• GCC 5xxx
• BIOL 3905 - Beyond the Nobel Prize: Examining the Evolution of Swedish Innovation [GP] (3.0 cr)
• Additional STEM Electives
  Take 0 - 5 credit(s) from the following:
  • CHEM 2302 - Organic Chemistry II (3.0 cr)
  • CHEM 2311 - Organic Chemistry (5.0 cr)
• CHEM 2312H - Honors Organic Lab (5.0 cr)
• CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
• CSCI 3081W - Program Design and Development [WI] (4.0 cr)
• ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied with the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:

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Program Sub-plans

A sub-plan is not required for this program.

Integrated BS/MPH-Environmental Health

The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of at least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus
Biology Minor
College of Biological Sciences - Adm
College of Biological Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20 to 22

Biology is the scientific exploration of the diverse world of living organisms. Today, biological research spans an almost infinite spectrum of studies from molecules to ecosystems. The field of biology has expanded enormously within the past four decades.

Within a flexible curriculum, the biology minor provides an opportunity for non-CBS students to gain a broad understanding of the fundamental nature and characteristics of living things, or explore specific areas of the field in greater depth. The minor offers great freedom for students to select coursework that is most relevant to their interests and academic goals.

The biology minor is available to non-CBS students only. Due to significant course overlap, the following majors are not eligible to complete the biology minor:
- Animal Science (Science/Pre-Vet sub-plan only)
- Plant Science
- Biology, Society, and the Environment
- Environmental Sciences, Policy, and Management (sub-plans in Environmental Science, Environmental Education and Communication)
- Fisheries and Wildlife (all sub-plans)
- Food Science
- Medical Laboratory Sciences
- Physiology
- Nutrition (Nutritional Sciences sub-plan only)
- Scientific and Technical Communication (sub-plan in Biological and Health Sciences)
- Individually designed programs with a life sciences emphasis.

Students pursuing an individualized degree program (IDP) may be ineligible to pursue the biology minor if IDP and biology minor coursework overlap more than 3 credits. These requests will be reviewed on an individual basis.

Students are not allowed to pursue both a biology minor and a minor in another CBS discipline, with the exception of pharmacology.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
To count for the biology minor, all courses must be taken A-F and receive a grade of C- or higher (or an S in Directed Research or Directed Studies). Courses that are cross-listed with CBS designators may be allowed for use in the minor.

At least 9 of the biology electives must have a CBS designator (BIOL, BIOC, COP, GCD, EEB, MICB, NSCI, PMB). Students may petition for up to 3 credits of biology-related credits from non-CBS designators (including study-abroad credits) to count toward the upper-division electives. These courses will be evaluated by the DUGS for instructional level and biological relevance.

Minor Courses
Chemistry
- CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Introductory Biology
Students should take one Introductory Biology course or complete the Foundations of Biology lecture and lab. Take 1 or more course(s) from the following:
• BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
**Foundations of Biology**

- **BIOL 1951** - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- **or BIOL 1951H** - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- **BIOL 1961** - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

**Electives**

All courses for the minor must have a CBS designator (BIOL, BIOC, COP, GCD, EEB, MICB, NSCI, PMB) or be cross-listed with CBS designators.

Take 12 or more credit(s) from the following:

Take 0 - 9 credit(s) from the following:

- **BIOL 2005** - Animal Diversity Laboratory (2.0 cr)
- **BIOL 2007** - Marine Animal Diversity Laboratory (1.0 cr)
- **BIOL 2012** - General Zoology (4.0 cr)
- **PMB 2022** - General Botany (3.0 cr)
- **VBS 2032** - General Microbiology with Laboratory (5.0 cr)
- **BIOL 2003** - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- **or BIOL 2003H** - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)

Take 3 or more credit(s) from the following:

- **BIOC 3021** - Biochemistry (3.0 cr)
- **BIOC 4025W** - Laboratory in Biochemistry [WI] (2.0 cr)
- **BIOC 4125** - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- **BIOC 4325** - Laboratory in Mass Spectrometry (1.0 cr)
- **BIOC 4331** - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
- **BIOC 4332** - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
- **BIOC 4521** - Introduction to Physical Biochemistry (3.0 cr)
- **BIOC 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 4960** - Special Topics in Biochemistry (3.0 cr)
- **BIOC 4993** - Directed Studies (1.0 - 7.0 cr)
- **BIOC 4994** - Directed Research (1.0 - 7.0 cr)
- **BIOC 3004** - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
- **BIOC 3209** - Understanding the Evolution-Creationism Controversy [CIV] (3.0 cr)
- **BIOC 3211** - Physiology of Humans and Other Animals (3.0 cr)
- **BIOC 3503** - Biology of Aging (2.0 cr)
- **BIOC 3600** - Directed Instruction (1.0 - 2.0 cr)
- **BIOC 3610** - Internship: Professional Experience in Biological Sciences (1.0 - 6.0 cr)
- **BIOC 3700** - Undergraduate Seminar (1.0 - 3.0 cr)
- **BIOC 3960H** - Communicating in the Biological Sciences (1.0 cr)
- **BIOC 4201** - Teaching in the Biology Laboratory (1.0 cr)
- **BIOC 4590** - Coral Reef Ecology (2.0 cr)
- **BIOC 4596** - Coral Reef Ecology (Dive Trip) (2.0 cr)
- **BIOC 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 4850** - Special Topics in Biology (1.0 - 5.0 cr)
- **BIOC 4993** - Directed Studies (1.0 - 7.0 cr)
- **BIOC 4994** - Directed Research (1.0 - 7.0 cr)
- **BIOC 5309** - Molecular Ecology and Ecological Genomics (3.0 cr)
- **BIOC 5950** - Special Topics (1.0 - 4.0 cr)
- **EEB 3001** - Ecology and Society [ENV] (3.0 cr)
- **EEB 3407** - Ecology (3.0 cr)
- **EEB 3408W** - Ecology [WI] (4.0 cr)
- **EEB 3409** - Evolution (3.0 cr)
- **EEB 3411** - Introduction to Animal Behavior (3.0 cr)
- **EEB 3412W** - Introduction to Animal Behavior [WI] (4.0 cr)
- **EEB 3603** - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- **EEB 3807** - Ecology (4.0 cr)
- **EEB 3811W** - Introduction to Animal Behavior [WI] (4.0 cr)
- **EEB 4068** - Plant Physiological Ecology (3.0 cr)
- **EEB 4129** - Mammalogy (4.0 cr)
- **EEB 4134** - Introduction to Ornithology (4.0 cr)
- **EEB 4329** - Primate Ecology and Social Behavior (3.0 cr)
- **EEB 4330W** - Animal Communication [WI] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 4611 - Biogeochemical Processes (3.0 cr)
• EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4839 - Field Studies in Mammalogy (4.0 cr)
• EEB 4844 - Field Ornithology (4.0 cr)
• EEB 4993 - Directed Studies (1.0 - 7.0 cr)
• EEB 4994 - Directed Research (1.0 - 6.0 cr)
• EEB 5042 - Quantitative Genetics (3.0 cr)
• EEB 5053 - Ecology: Theory and Concepts (4.0 cr)
• EEB 5068 - Plant Physiological Ecology (3.0 cr)
• EEB 5221 - Molecular Evolution (3.0 cr)
• EEB 5371 - Principles of Systematics (3.0 cr)
• EEB 5601 - Limnology (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• EEB 5609 - Ecosystem Ecology (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
• GCD 3033 - Principles of Cell Biology (3.0 cr)
• GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
• GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• GCD 4134 - Endocrinology (3.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4993 - Directed Studies (1.0 - 7.0 cr)
• GCD 4994 - Directed Research (1.0 - 7.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• GCD 5002 - Plant Biology: Function (2.0 cr)
• GCD 5005W - Plant Function Laboratory [WI] (2.0 cr)
• GCD 5035 - Personal Microbiome Analysis (3.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
• NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
• NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
• NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
• NSCI 4994 - Directed Research (1.0 - 6.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4601 - Topics in Plant Biochemistry (3.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 7.0 cr)
• PMB 5516 - Plant Cell Biology (3.0 cr)
• PMB 5601 - Topics in Plant Biochemistry (3.0 cr)
• PMB 5960 - Special Topics (1.0 - 3.0 cr)
• ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
• BIOL 4003 - Genetics (3.0 cr)
  or GCD 3022 - Genetics (3.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
  or GCD 4005W - Cell Biology-Writing Intensive [WI] (4.0 cr)
• PMB 4412 - Plant Physiology (3.0 cr)
  or PMB 5412 - Plant Physiology (3.0 cr)
Twin Cities Campus
Cell Biology Minor
Genetics, Cell Biology, and Development TCBS
College of Biological Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20

This minor focuses on understanding cells, the basic unit of life from bacteria and archaea to eukaryotes. Training in cell biology involves understanding how cells function: understanding structures, biochemical pathways and metabolism, signaling and development. Organismal responses to the environment, to pharmaceutical agents, to diseases, etc. all are cellular responses that manifest at the organismal level. Training provided by the cell biology minor will benefit students in a wide variety of majors including health sciences, engineering, and agriculture.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only for non-CBS students. Students pursuing the Genetics minor are not eligible for the Cell Biology minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Chemistry
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)

Cell Biology
GCD 3033 - Principles of Cell Biology (3.0 cr)
or BIOL 4004 - Cell Biology (3.0 cr)

Electives
Take 9 or more credit(s) from the following:
• GCD 2171 - Stem Cells in Biomedicine and Society (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
Twin Cities Campus

Cellular and Molecular Neuroscience Minor

Neuroscience

College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 25 to 31

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 1 course(s) before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Cellular and Molecular Neuroscience prerequisites

- CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
- CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
- or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1081 - Chemistry for the Life Sciences I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1086 - Chemistry for the Life Sciences II Laboratory [PHYS] (1.0 cr)
- or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
- CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Biol 1009 - General Biology [BIOL] (4.0 cr)
- or BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)

Take exactly 1 course(s) from the following:
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
- BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
- BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)

Neurobiology I

- NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)

Minor Requirements

Students who are pursuing the CBS neuroscience BS are not eligible for the cellular and molecular neuroscience minor.

Cellular and Molecular Neuroscience minor requirements

Core courses
- Take 2 or more course(s) from the following:
  - NSC 5461 - Cellular and Molecular Neuroscience (4.0 cr)
  - NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
  - NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
  - NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
  - NSCI 2101 - Human Neuroanatomy (without a lab) (3.0 cr)
- or NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)

Additional elective

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Information current as of September 02, 2020

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Courses listed as cellular and molecular neuroscience minor requirement options that are also elective options may count for one requirement or the other, but not both.

Take 1 or more course(s) from the following:

- BMEN 5411 - Neural Engineering (3.0 cr)
- EEB 4330W - Animal Communication [WI] (3.0 cr)
- NSC 5203 - Basic and Clinical Vision Science (3.0 cr)
- NSC 5461 - Cellular and Molecular Neuroscience (4.0 cr)
- NSC 5561 - Systems Neuroscience (4.0 cr)
- NSC 5661W - Behavioral Neuroscience [WI] (4.0 cr)
- NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
- NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- NSCI 3505 - Mind and Brain (3.0 cr)
- NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
- NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
- NSCI 4201 - Neuroscience of Drug Abuse (3.0 cr)
- NSCI 4501 - Neurodegenerative Diseases, Mechanisms to Therapies (3.0 cr)
- PHCL 4343 - Pharmacology of the Synapse (3.0 cr)
- PSY 5036W - Computational Vision [WI] (3.0 cr)
- PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
- PSY 5062 - Cognitive Neuropsychology (3.0 cr)
- NSCI 2001 - Human Neuroanatomy (without a lab) (3.0 cr)

or NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)
Twin Cities Campus

Cellular and Organismal Physiology B.S.
College of Biological Sciences - Adm

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 78 to 86
• Degree: Bachelor of Science

Physiology is a unique field that studies the mechanisms of cells, organs, tissues, and organisms, incorporating concepts and approaches especially from physics, genetics, and biochemistry. Physiology is oriented to "understanding how biological systems function" and therefore is a natural pre-med major. The physiology BS is a broad-based physiology major and is excellent preparation for medical school, dental school, veterinarian school, and graduate school in a variety of biological disciplines. The physiology BS shares a core set of chemistry, math, physics, and biology courses required for all CBS students. This allows students to switch majors within CBS without losing credits towards graduation through their second year. This also promotes core competency in CBS graduates and promotes community within the CBS student body since students take classes together. The biology core includes the foundations of biology series, molecular biology and society, biochemistry, genetics, and cell biology. In addition, students are exposed to the physiology of the entire range of organisms from bacteria to plants, fungi, animals, and humans.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 17 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research
BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
BIOL 1806 - Nature of Life, Part Two (0.5 cr)
BIOL 2905 - Nature of Life, Part III (0.5 cr)
BIOL 2906 - Nature of Life, Part IV (0.5 cr)
or This track (BIOL 3001) is for transfer students only.
BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology
BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
BIOL 2903 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
or BIOL 2903H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements
MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Take 1 or more course(s) from the following:
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- MATH 1572H - Honors Calculus II (4.0 cr)
- MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (4.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

or Track 2
This track is allowable for students entering CBS with previous chemistry credit, or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)

or Track 2 (Honors Option)
This track is allowable for CBS honors students.
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Physics

PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401W - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402W - Honors Physics II [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3015 - Molecular Biology (2.0 cr)
or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)

Ecology, Evolution, and Biodiversity

PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
or PMB 3002 - Plant Biology: Function (2.0 cr)
PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
or EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (4.0 cr)
or EEB 3807 - Ecology (4.0 cr)
or EEB 3409 - Evolution (3.0 cr)
or EEB 5409 - Evolution (3.0 cr)
or EEB 3411 - Introduction to Animal Behavior (3.0 cr)
or EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
or EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)

Cellular and Organismal Physiology Major-Specific Coursework
MICB 3301 - Biology of Microorganisms (5.0 cr)
PHSL 3051 - Human Physiology (4.0 cr)
BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
BIOL 2005 - Animal Diversity Laboratory (2.0 cr)
PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
or PMB 4412 - Plant Physiology (3.0 cr)
or PMB 5412 - Plant Physiology (3.0 cr)

Cellular and Organismal Physiology Major Electives
A total of 6 major elective credits are required. A maximum of one Other Elective Options courses can be taken toward the 6 credits. A maximum of four directed research/studies credits may be counted toward the degree overall. Note: while some of these courses appear as options in other areas of the major, any individual course may only fulfill one major requirement.
Take 6 or more credit(s) from the following:
Physiology Major Electives
The following courses can be used for physiology major elective credit, if not used to fulfill any other major requirements.
Take 6 or more credit(s) from the following:
• BIOG 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOG 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
• BIOG 5444 - Muscle (3.0 cr)
• BIOI 3503 - Biology of Aging (2.0 cr)
• BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• EEB 3409 - Evolution (3.0 cr)
• EEB 4068 - Plant Physiological Ecology (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• FNRM 3104 - Forest Ecology (4.0 cr)
• GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4094 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
• MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
• MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
• PLPA 5203 - Introduction to Fungal Biology (3.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4601 - Topics in Plant Biochemistry (3.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (4.0 cr)
• PMB 4412 - Plant Physiology (3.0 cr)
or PMB 5412 - Plant Physiology (3.0 cr)
• EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (4.0 cr)
or EEB 3807 - Ecology (4.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
or EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
or EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• PMB 3212 - Fungi - A Kingdom of Their Own (3.0 cr)
or PMB 5212 - Fungi - A Kingdom of Their Own (3.0 cr)
• Directed Research and Studies
Take 0 - 4 credit(s) from the following:

- BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOC 4994 - Directed Research (1.0 - 7.0 cr)
- BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOL 4994 - Directed Research (1.0 - 7.0 cr)
- COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
- COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
- COP 4993 - Directed Studies (1.0 - 7.0 cr)
- COP 4994 - Directed Research (1.0 - 7.0 cr)
- EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4993 - Directed Studies (1.0 - 7.0 cr)
- EEB 4994 - Directed Research (1.0 - 6.0 cr)
- GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4993 - Directed Studies (1.0 - 7.0 cr)
- GCD 4994 - Directed Research (1.0 - 7.0 cr)
- MICB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4993 - Directed Studies (1.0 - 7.0 cr)
- MICB 4994 - Directed Research (1.0 - 7.0 cr)
- NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
- NSCI 4994 - Directed Research (1.0 - 6.0 cr)
- PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4993 - Directed Studies (1.0 - 7.0 cr)
- PMB 4994 - Directed Research (1.0 - 7.0 cr)

- PMB 3812 - Field Mycology (3.0 cr)
  or PMB 5812 - Field Mycology (3.0 cr)
- PMB 3802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
  or PMB 5802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)

Other Elective Options

Take 0 - 1 course(s) from the following:

- BIOC 4xxx
- BIOC 5xxx
- BIOL 3610 - Internship: Professional Experience in Biological Sciences (1.0 - 6.0 cr)
- BIOL 4xxx
- BIOL 5xxx
- CHEM 2311 - Organic Lab (4.0 cr)
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- EEB 4xxx
- EEB 5xxx
- GCD 4xxx
- GCD 5xxx
- MATH 1272 - Calculus II (4.0 cr)
- MICB 4xxx
- MICB 5xxx
- NSCI 4xxx
- NSCI 5xxx
- PMB 4xxx
- PMB 5xxx
- PMB 3802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
  or PMB 5802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- EEB 4839 - Field Studies in Mammalogy (4.0 cr)

Take 0 - 1 course(s) from the following:

- GCC 3xxx
- GCC 5xxx

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
- BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4796W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
- BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
- COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
- EEB 3408W - Ecology [WI] (4.0 cr)
- EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
- EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
- EEB 4330W - Animal Communication [WI] (3.0 cr)
- EEB 4690W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4005W - Cell Biology: Writing Intensive [WI] (4.0 cr)
- GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- MICB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- NSCI 3011W - Neuroscience and Society [CIV, WI] (4.0 cr)
- NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS/MPH-Environmental Health
The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of a least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
**Twin Cities Campus**

**Computational Biology Minor**

*College of Biological Sciences - Adm*

**College of Biological Sciences**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 25 to 26

Large-scale data is now a norm in biology and the math and computational skills needed to analyze large-scale data have become crucial in almost every field of biology. For example, the analysis of big data is essential for modern personalized medicine and precision agriculture. The ability to properly analyze and interpret biological data requires biological knowledge and experience as well. Accordingly, the number of biology-related jobs that require math or computational skills has been rapidly increasing in both industry and academia. Courses in the minor were selected mainly because they combine computation or mathematical analysis with biology. The minor is designed to give undergraduate students in biology-related majors the math and computational skills necessary for current biological research.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://www.admissions.umn.edu/).

**Required prerequisites**

**Prerequisites**

These courses are prerequisites for courses required in the minor.

- **BIOL 1009** - General Biology [BIOL] (4.0 cr)
- or **BIOL 1951** - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or **BIOL 1951H** - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)

**Minor Requirements**

Students may take both **BIOL 3272/3272H/5272** and **CSCI 3003** and can count one of them as a required course and the other for additional credits toward the minor.

**Genetics**

- **GCD 3022** - Genetics (3.0 cr)
- or **BIOL 4003** - Genetics (3.0 cr)

**Applied Biostatistics or Intro to Computing in Biology**

- **BIOL 3272** - Applied Biostatistics (4.0 cr)
- or **BIOL 3272H** - Applied Biostatistics (4.0 cr)
- or **BIOL 5272** - Applied Biostatistics (4.0 cr)
- or **CSCI 3003** - Introduction to Computing in Biology (3.0 cr)

**Computational Biology Minor Electives**

Take 15 or more credit(s) from the following:

- **AGRO 5431** - Applied Plant Genomics and Bioinformatics (3.0 cr)
- **BIOC 4521** - Introduction to Physical Biochemistry (3.0 cr)
- **BIOC 5361** - Microbial Genomics and Bioinformatics (3.0 cr)
- **BIOC 5527** - Introduction to Modern Structural Biology (4.0 cr)
- **CSCI 3003** - Introduction to Computing in Biology (3.0 cr)
- **CSCI 5461** - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
- **CSCI 5481** - Computational Techniques for Genomics (3.0 cr)
- **EEB 5042** - Quantitative Genetics (3.0 cr)
- **EEB 5371** - Principles of Systematics (3.0 cr)
- **GCD 3485** - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
- **GCD 5005** - Computer Programming for Biology (3.0 cr)
- **MATH 2241** - Mathematical Modeling of Biological Systems (3.0 cr)
- PHCL 5111 - Pharmacogenomics (3.0 cr)
- PLPA 5301 - Large Scale Omic Data in Plant Biology (3.0 cr)
- VMED 5181 - Spatial Analysis in Infectious Disease Epidemiology (3.0 cr)
- BIOL 3272 - Applied Biostatistics (4.0 cr)
  or BIOL 3272H - Applied Biostatistics (4.0 cr)
  or BIOL 5272 - Applied Biostatistics (4.0 cr)
Twin Cities Campus
Ecology, Evolution, and Behavior B.S.

Ecology, Evolution & Behavior
College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 70 to 84
- Degree: Bachelor of Science

Students majoring in ecology, evolution, and behavior (EEB) focus on three related areas of biology. Ecology examines the growth and maintenance of populations and their interactions in communities, and relationships among organisms and physical events in terrestrial and aquatic ecosystems. Evolution investigates the origin and change of biological diversity by studying evolutionary patterns and processes at various temporal and spatial scales. Behavioral biology explores behavioral adaptations to the environment, mechanisms of behavior, and the evolution of social systems.

A BS in EEB prepares students for graduate study in integrative biology and related biological sciences, careers in teaching, and entry-level scientist positions in industry, government agencies, nonprofit agencies, and universities.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 17 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research
BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
BIOL 1806 - Nature of Life, Part Two (0.5 cr)
BIOL 2905 - Nature of Life, Part III (0.5 cr)
BIOL 2906 - Nature of Life, Part IV (0.5 cr)
or BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology
BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements
MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Take 1 or more course(s) from the following:

- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- MATH 1572H - Honors Calculus II (4.0 cr)
- MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (4.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
- CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
- CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
- CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
- CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

or Track 2
This track is allowable for students entering CBS with previous chemistry credit or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
  or EEB 4611 - Biogeochemical Processes (3.0 cr)

or Track 2 (Honors Option)
This track is allowable for CBS honors students.
- CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
- CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
- CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
- CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Physics
- PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology
- BIOL 3015 - Molecular Biology (2.0 cr)
  or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
- BIOL 3022 - Biochemistry for Life Scientists (3.0 cr)
  or BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
- BIOL 4003 - Genetics (3.0 cr)

Ecology, Evolution, and Biodiversity

Ecology, Evolution, and Behavior
Take 2 or more course(s) from the following:

Evolution
- EEB 3409 - Evolution (3.0 cr)
  or EEB 5409 - Evolution (3.0 cr)

Ecology
- EEB 3407 - Ecology (3.0 cr)
  or EEB 3408W - Ecology [WI] (4.0 cr)
  or EEB 3807 - Ecology (4.0 cr)

Animal Behavior
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
  or EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
  or EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)

Biodiversity
Organismal Biology
Courses, or course pairs, must be from two different groups.
Take 2 or more course(s) from the following:

Animal Biology
BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
BIOL 2005 - Animal Diversity Laboratory (2.0 cr)

Plant Biology
PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
or PMB 3002 - Plant Biology: Function (2.0 cr)
    PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)

Microbiology
MICB 3301 - Biology of Microorganisms (5.0 cr)

EEB Major Electives
The 10 credits include at least one lab and one upper division EEB course. A minimum of 2 credits of directed research (4994/4794W) must be completed to satisfy the lab/field experience. A maximum of 7 credits of directed research may be used toward a CBS degree. Note: while some of these courses appear as options in other areas of the major, any individual course may only fulfill one major requirement.
Take 10 or more credit(s) from the following:

Field/Lab Experience
Take 2 or more credit(s) from the following:

• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4994 - Directed Research (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4994 - Directed Research (1.0 - 7.0 cr)
• COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
• COP 4994 - Directed Research (1.0 - 7.0 cr)
• EEB 3407 - Ecology (3.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3807 - Ecology (4.0 cr)
• EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4839 - Field Studies in Mammalogy (4.0 cr)
• EEB 4844 - Field Ornithology (4.0 cr)
• EEB 4994 - Directed Research (1.0 - 6.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4994 - Directed Research (1.0 - 7.0 cr)
• GCD 5111 - Quantitative Fluorescence Microscopy (3.0 cr)
• MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• MICB 4994 - Directed Research (1.0 - 7.0 cr)
• NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4994 - Directed Research (1.0 - 6.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 7.0 cr)
• EEB 3534 - Biodiversity Science: The origins, maintenance, consequences, detection & assessment of biodiversity [ENV] (3.0 cr)
or EEB 5534 - Biodiversity Sci: The origins, maintenance, consequences, detection and assessment of biodiversity [ENV] (3.0 cr)
• PMB 3802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
or PMB 5802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
• PMB 3812 - Field Mycology (3.0 cr)
or PMB 5812 - Field Mycology (3.0 cr)

Upper Division EEB
Take 1 or more course(s) from the following:

• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOC 4994 - Directed Research (1.0 - 7.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOL 4994 - Directed Research (1.0 - 7.0 cr)
• COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
• COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
• COP 4993 - Directed Studies (1.0 - 7.0 cr)
• COP 4994 - Directed Research (1.0 - 7.0 cr)
• EEB 3500 - Special Topics in Ecology, Evolution and Behavior (1.0 - 3.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 3701 - EEB Seminar (1.0 cr)
• EEB 4068 - Plant Physiological Ecology (3.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4839 - Field Studies in Mammalogy (4.0 cr)
• EEB 4844 - Field Ornithology (4.0 cr)
• EEB 4993 - Directed Studies (1.0 - 7.0 cr)
• EEB 4994 - Directed Research (1.0 - 6.0 cr)
• EEB 5042 - Quantitative Genetics (3.0 cr)
• EEB 5053 - Ecology: Theory and Concepts (4.0 cr)
• EEB 5068 - Plant Physiological Ecology (3.0 cr)
• EEB 5221 - Molecular Evolution (3.0 cr)
• EEB 5371 - Principles of Systematics (3.0 cr)
• EEB 5601 - Limnology (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• GCC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCC 4993 - Directed Studies (1.0 - 7.0 cr)
• GCC 4994 - Directed Research (1.0 - 7.0 cr)
• EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
or ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
• EEB 3534 - Biodiversity Science: The origins, maintenance, consequences, detection & assessment of biodiversity [ENV] (3.0 cr)
or EEB 5534 - Biodiversity Sci: The origins, maintenance, consequences, detection and assessment of biodiversity [ENV] (3.0 cr)
• ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
or EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
or EEB 5609 - Ecosystem Ecology (3.0 cr)
• PMB 3212 - Fungi - A Kingdom of Their Own (3.0 cr)
or PMB 5212 - Fungi - A Kingdom of Their Own (3.0 cr)
• Grand Challenge Curriculum Courses
  Take 0 - 1 course(s) from the following:
  • GCC 3xxx
  • GCC 5xxx

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:

- **BIOC 4025W** - Laboratory in Biochemistry [WI] (2.0 cr)
- **BIOC 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOC 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOL 4211W** - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
- **BIOL 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **BIOL 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **COP 4793W** - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
- **COP 4794W** - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
- **EEB 3408W** - Ecology [WI] (4.0 cr)
- **EEB 3412W** - Introduction to Animal Behavior [WI] (4.0 cr)
- **EEB 3811W** - Introduction to Animal Behavior [WI] (4.0 cr)
- **EEB 4330W** - Animal Communication [WI] (3.0 cr)
- **EEB 4609W** - Ecosystem Ecology [ENV, WI] (3.0 cr)
- **EEB 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **EEB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **GCD 4005W** - Cell Biology: Writing Intensive [WI] (4.0 cr)
- **GCD 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **GCD 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **MICB 4161W** - Eukaryotic Microbiology [WI] (3.0 cr)
- **MICB 4225W** - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- **MICB 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **MICB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **NSCI 3001W** - Neuroscience and Society [CIV, WI] (4.0 cr)
- **NSCI 3102W** - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- **NSCI 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- **NSCI 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- **PMB 3005W** - Plant Function Laboratory [WI] (2.0 cr)
- **PMB 3007W** - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- **PMB 4516W** - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- **PMB 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- **PMB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)

**Program Sub-plans**

A sub-plan is not required for this program.

**Integrated BS/MPH-Environmental Health**

The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of at least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus
Genetics Minor
Genetics, Cell Biology, and Development TCBS
College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 20

The genetics minor focuses on understanding the biology of genes. Genes are composed of DNA, encode proteins, are the basis for phenotypes. Genes are the heritable information that is passed from parent to progeny. Differences in genes are the diversity that is the basis for evolution and the cause of genetic diseases. Training provided by the genetics minor will benefit students in a wide variety of majors including health sciences, engineering and agriculture.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only for non-CBS students. Students pursuing the Cell Biology minor are not eligible for the Genetics minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Chemistry
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)

Genetics
GCD 3022 - Genetics (3.0 cr)
or BIOL 4003 - Genetics (3.0 cr)

Electives
Take 9 or more credit(s) from the following:
• GCD 2171 - Stem Cells in Biomedicine and Society (3.0 cr)
• GCD 3486 - Personal Genome Analysis (4.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
• EEB 5042 - Quantitative Genetics (3.0 cr)
• BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
Twin Cities Campus
Genetics, Cell Biology, and Development B.S.
Genetics, Cell Biology, and Development TCBS
College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 84
- Degree: Bachelor of Science

The program genetics, cell biology, and development (GCD) focuses on the mechanisms by which genetic information is used to specify cell structure and function, and how that information drives cellular interactions that convert a single cell to develop into a complete organism. GCD students learn about advances in the field by studying model organisms like plants, fruit flies, zebrafish, and mice.

A BS in GCD prepares students for graduate study in molecular biology or related biological sciences, for professional training programs in health sciences, careers in teaching, and entry-level positions in industry, government agencies, or universities.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 18 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research
- BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
- BIOL 1806 - Nature of Life, Part Two (0.5 cr)
- BIOL 2905 - Nature of Life, Part III (0.5 cr)
- BIOL 2906 - Nature of Life, Part IV (0.5 cr)
- or BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology
- BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1951L - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1951L - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1951L - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements
- MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Take 1 or more course(s) from the following:
• CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
• MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
  or BIOL 3272H - Applied Biostatistics (4.0 cr)
  or BIOL 5272 - Applied Biostatistics (4.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences II Laboratory (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

or Track 2
This track is allowable for students entering CBS with previous chemistry credit or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)

or Track 2 (Honors Option)
This track is allowable for CBS honors students.
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Physics

PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
  or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
  or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3015 - Molecular Biology (2.0 cr)
  or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
  or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)
  or GCD 4005W - Cell Biology-Writing Intensive [WI] (4.0 cr)

Ecology, Evolution, and Biodiversity
Courses cannot fulfill both the ecology, evolution, and biodiversity requirements and a major elective requirement.
Take 2 or more course(s) from the following:

Organismal Biology
Take 1 or more course(s) from the following:
• GCD 4161 - Developmental Biology (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
**BIOL 2005** - Animal Diversity Laboratory (2.0 cr)

**Ecology, Evolution, and Behavior**
Take 1 or more course(s) from the following:
- **EEB 3807** - Ecology (4.0 cr)
- **EEB 3811W** - Introduction to Animal Behavior [WI] (4.0 cr)
- **EEB 3407** - Ecology (3.0 cr)
- **EEB 3408W** - Ecology [WI] (4.0 cr)
- **EEB 3411** - Introduction to Animal Behavior (3.0 cr)
- **EEB 3412W** - Introduction to Animal Behavior [WI] (4.0 cr)
- **EEB 3409** - Evolution (3.0 cr)
or **EEB 5409** - Evolution (3.0 cr)
- **EEB 3534** - Biodiversity Science: The origins, maintenance, consequences, detection & assessment of biodiversity [ENV] (3.0 cr)
or **EEB 5534** - Biodiversity Sci: The origins, maintenance, consequences, detection and assessment of biodiversity [ENV] (3.0 cr)

**GCD Major Electives**
Total of three courses are required from at least two of the following areas: genetics, cell biology, developmental biology. **GCD 4151**, **4161**, and **4171** cannot count in more than one area. To count as an elective lab, directed research must be completed for a minimum of 3 credits; credits can be split over multiple terms using **4994**, **4794W**, or a combination of the two. Students may use a maximum of seven credits of directed research toward a CBS degree.

Take 15 or more credit(s) from the following:

**Elective Labs**
Take 1 or more course(s) from the following:
- **BIOC 4025W** - Laboratory in Biochemistry [WI] (2.0 cr)
- **BIOC 4125** - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- **GCD 3485** - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
- **GCD 3486** - Personal Genome Analysis (4.0 cr)
- **GCD 4025** - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
- **GCD 4111** - Histology: Cell and Tissue Organization (4.0 cr)
- **GCD 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- **GCD 4994** - Directed Research (1.0 - 7.0 cr)
- **GCD 5005** - Computer Programming for Biology (3.0 cr)
- **GCD 5111** - Quantitative Fluorescence Microscopy (3.0 cr)
- **MICB 4225W** - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- **MICB 4235** - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)

**Genetics**
Take 0 - 3 course(s) from the following:
- **EEB 5042** - Quantitative Genetics (3.0 cr)
- **GCD 3485** - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
- **GCD 3486** - Personal Genome Analysis (4.0 cr)
- **GCD 4034** - Molecular Genetics and Genomics (3.0 cr)
- **GCD 4143** - Human Genetics and Genomics (3.0 cr)
- **GCD 4151** - Molecular Biology of Cancer (3.0 cr)
- **GCD 4161** - Developmental Biology (3.0 cr)
- **GCD 4171** - Stem Cells in Biology and Medicine (3.0 cr)
- **MICB 4171** - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)

**Cell Biology**
Take 0 - 3 course(s) from the following:
- **GCD 4111** - Histology: Cell and Tissue Organization (4.0 cr)
- **GCD 4171** - Stem Cells in Biology and Medicine (3.0 cr)
- **GCD 6036** - Molecular Cell Biology (3.0 cr)
- **MICB 4131** - Immunology (3.0 cr)
- **NSCI 3101** - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
- **PMB 4516W** - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
or **PMB 5516** - Plant Cell Biology (3.0 cr)

**Developmental Biology**
Take 0 - 3 course(s) from the following:
- **GCD 4151** - Molecular Biology of Cancer (3.0 cr)
- **GCD 4161** - Developmental Biology (3.0 cr)
- **GCD 4171** - Stem Cells in Biology and Medicine (3.0 cr)
- **NSCI 4101** - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)

**Additional Electives**
Take 0 - 4 credit(s) from the following:
- **BIOC 4025W** - Laboratory in Biochemistry [WI] (2.0 cr)
- **BIOC 4125** - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- **BIOC 4331** - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
• BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
• BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOC 4994 - Directed Research (1.0 - 7.0 cr)
• BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
• BIOL 3503 - Biology of Aging (2.0 cr)
• BIOL 3600 - Directed Instruction (1.0 - 2.0 cr)
• BIOL 3610 - Internship: Professional Experience in Biological Sciences (1.0 - 6.0 cr)
• BIOL 3700 - Undergraduate Seminar (1.0 - 3.0 cr)
• BIOL 4201 - Teaching in the Biology Laboratory (1.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4950 - Special Topics in Biology (1.0 - 4.0 cr)
• BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOL 4994 - Directed Research (1.0 - 7.0 cr)
• BIOL 5409 - Evolution (3.0 cr)
• BIOL 5950 - Special Topics (1.0 - 4.0 cr)
• EEB 3407 - Ecology (3.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3807 - Ecology (4.0 cr)
• EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4993 - Directed Studies (1.0 - 7.0 cr)
• EEB 4994 - Directed Research (1.0 - 7.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4993 - Directed Studies (1.0 - 7.0 cr)
• GCD 4994 - Directed Research (1.0 - 7.0 cr)
• EEB 5042 - Quantitative Genetics (3.0 cr)
• EEB 5221 - Molecular Evolution (3.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4993 - Directed Studies (1.0 - 7.0 cr)
• MIB 3303 - Biology of Microorganisms (3.0 cr)
• MIB 4131 - Immunology (3.0 cr)
• MIB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
• MIB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
• MIB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
• MIB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
• MIB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• MIB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
• MIB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• MIB 4993 - Directed Studies (1.0 - 7.0 cr)
• MIB 4994 - Directed Research (1.0 - 7.0 cr)
• MIB 4994 - Directed Research (1.0 - 7.0 cr)
• MIB 4994 - Directed Research (1.0 - 7.0 cr)
• MIB 5035 - Personal Microbiome Analysis (3.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
• NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
• NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
• NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
• NSCI 4994 - Directed Research (1.0 - 7.0 cr)
• PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
• PHCL 5111 - Pharmacogenomics (3.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PMB 4131 - Prokaryotic Genetics (3.0 cr)
• PMB 4412 - Plant Physiology (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 7.0 cr)
• PMB 5412 - Plant Physiology (3.0 cr)
• PMB 5516 - Plant Cell Biology (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
  or MICB 3303 - Biology of Microorganisms (3.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
  or PHSL 5444 - Muscle (3.0 cr)
• EEB 3409 - Evolution (3.0 cr)
  or EEB 5409 - Evolution (3.0 cr)
• PMB 3212 - Fungi - A Kingdom of Their Own (3.0 cr)
  or PMB 5212 - Fungi - A Kingdom of Their Own (3.0 cr)
• Take 0 - 1 course(s) from the following:
  • GCC 3xxx
  • GCC 5xxx

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
• COP 4794W - Writing Intensive Directed Research [WI] (1.0 - 7.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4005W - Cell Biology-Writing Intensive [WI] (4.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
• MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• MICB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS/MPH-Environmental Health
The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS
students interested in pursuing the Environmental Health MPH degree. 

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications. 

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of at least 3.25. 

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree. 

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year. 

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus

Integrative Neuroscience Minor
Neuroscience
College of Biological Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 12 to 14

The neuroscience minor provides an in-depth contemporary understanding of how the nervous system functions in both health and disease. The goal of the minor is to provide instruction that will enrich the curriculum through an array of academic majors. As we will all experience the impact of nervous system disease ourselves or through family members and/or friends, instruction in this minor will offer insights into the nervous system that students can utilize throughout their lifetimes.

Note: Students pursuing an individualized degree program (IDP) may be ineligible to pursue the neuroscience minor if IDP and minor coursework overlap more than 3 credits. These requests will be reviewed on an individual basis.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Neuroscience Minor Prerequisite
NSCI 1001 - Fundamental Neuroscience: Understanding Ourselves [TS] (3.0 cr)

Minor Requirements
Integrative Neuroscience Minor Requirements
Take 2 or more course(s) from the following:
• NSCI 1002 - Social Neuroscience: Understanding Others (3.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3505 - Mind and Brain (3.0 cr)
• NSCI 2001 - Human Neuroanatomy (without a lab) (3.0 cr)
or NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)

Additional Elective
Courses listed as neuroscience minor requirement options (NSCI 1002, 2001, 2100, 3001W, and 3505) that are also elective options may count for one requirement or the other, but not both.

Take 1 or more course(s) from the following:
• BMEN 5411 - Neural Engineering (3.0 cr)
• CPSY 4329 - Biological Foundations of Development (3.0 cr)
• KIN 4133 - Perceptual-Motor Control and Learning (3.0 cr)
• NSCI 1002 - Social Neuroscience: Understanding Others (3.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3505 - Mind and Brain (3.0 cr)
• NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
• PHCL 4343 - Pharmacology of the Synapse (3.0 cr)
• PHSL 5444 - Muscle (3.0 cr)
• PSY 3061 - Introduction to Biological Psychology (3.0 cr)
• PSY 5064 - Brain and Emotion (3.0 cr)
• SLHS 3302 - Anatomy and Physiology of the Speech and Hearing Mechanisms (3.0 cr)
• SLHS 4301 - Introduction to the Neuroscience of Human Communication (3.0 cr)
• NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)
or **NSCI 2001** - Human Neuroanatomy (without a lab) (3.0 cr)
**Twin Cities Campus**

**Marine Biology Minor**

*College of Biological Sciences - Adm*

**College of Biological Sciences**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 24 to 28

Marine biology aims to understand all aspects of organisms that live in the seas, from their molecular composition and biochemistry, to how they comprise ecosystems. Consistent with this breadth, the proposed marine biology minor is an interdisciplinary curriculum through which students learn foundational concepts of marine biology, and gain perspectives about current issues that affect marine environments. Given that 71% of our planet is covered by oceans, and 95% of the readily available water is present in oceans, understanding marine chemistry, organisms, and ecosystems is an important, interdisciplinary goal. Through a combination of courses, laboratories, field-trips, internships, and study abroad experiences, students who complete the minor will gain knowledge and skills that will enrich their lives, as well as provide a base for subsequent study in marine biology.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

Students must complete 3 courses before admission to the program.

Students who have at least a 2.0 average in their math and science courses, and who have completed the following courses, will be eligible for admission to the minor.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**Required prerequisites**

**Prerequisites**

- **Biology course**
  - BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
  - or BIOL 1003 - Evolution and Biology of Sex [BIOL] (4.0 cr)
  - or BIOL 1009 - General Biology [BIOL] (4.0 cr)
  - or BIOL 1012 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
  - or BIOL 1055 - Environmental Biology: Science and Solutions with Laboratory [BIOL, ENV] (4.0 cr)
  - BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
  - or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
  - BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

- **Chemistry**
  - CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  - or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  - or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  - CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

**Minor Requirements**

Directed research and internship credits earned for experiences that are directly marine biology related may be considered for inclusion in the elective category by petition.

**Marine Biology Core**

The three marine biology core courses provide an overview of the chemistry and biology of marine organisms and marine environments. Note that BIOL 2007 has a pre or co-requisite of BIOL 2005 or BIOL 2012.

- ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
- FW 2003 - Introduction to Marine Biology (3.0 cr)
- BIOL 2007 - Marine Animal Diversity Laboratory (1.0 cr)
- BIOL 2005 - Animal Diversity Laboratory (2.0 cr)
or BIOL 2012 - General Zoology (4.0 cr)

**Marine Biology Elective Courses**

Students will select marine biology-related courses such as the ones listed below. Approval of elective courses will be at the discretion of the Director of Undergraduate Studies.

Take 6 or more credit(s) from the following:

- BIOL 4590 - Coral Reef Ecology (2.0 cr)
- BIOL 4596 - Coral Reef Ecology (Dive Trip) (2.0 cr)
- CFAN 3502 - Bahamas--Tropical Marine Biology and Shark Ecology (2.0 cr)
- CFAN 3510 - From Rainforest to Reef: Wildlife Medicine and Conservation in Belize (3.0 cr)
- CFAN 3522 - Sustainable Akumal: Turtles, tourists, cenotes and coral reefs [GP, ENV] (3.0 cr)
- EEB 4611 - Biogeochemical Processes (3.0 cr)
- ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- FW 4107 - Principles of Fisheries Science and Management (3.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- Take 0 - 1 course(s) from the following:
  - EEB 5601 - Limnology (3.0 cr)
  - ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
Twin Cities Campus
Microbiology B.S.
Microbiology
College of Biological Sciences

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 77 to 88
• Degree: Bachelor of Science

Microbiologists study the structure, function, and interaction of microbes, which make up 60 percent of the earth’s biomass. Regarded by many as the foundation of the biosphere, microbes were likely the first form of life on earth, predating plants and animals by more than three billion years. Microbiologists study the role of microbes, such as bacteria, fungi, and viruses in our world. A key goal of microbiologists is to find new ways to use microbes to our advantage, such as engineering bacteria to synthesize cancer drugs or clean up toxic waste sites.

The microbiology major prepares students for advanced work in graduate programs in microbiology and related fields and serves as preparation for careers in the health sciences. Microbiologists find employment in a variety of governmental, industrial, and pharmaceutical fields.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 21 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research
BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
BIOL 1806 - Nature of Life, Part Two (0.5 cr)
BIOL 2905 - Nature of Life, Part III (0.5 cr)
BIOL 2906 - Nature of Life, Part IV (0.5 cr)
or BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology
BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements
MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Take 1 or more course(s) from the following:
• CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
• MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)

Chemistry
Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
or Track 2
This track is allowable for students entering CBS with previous chemistry credit or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
or Track 2 (Honors Option)
This track is allowable for CBS honors students.
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Physics
PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology
BIOL 3015 - Molecular Biology (2.0 cr)
or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 3022 - Biochemistry for Life Scientists (3.0 cr)
or BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)

Ecology, Evolution, and Biodiversity
MICB 3301 - Biology of Microorganisms (5.0 cr)

Microbiology Major-specific Courses
Microbiology Major Core
Take exactly 4 course(s) from the following:
• BIOL 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
• BIOL 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
• MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
• MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
• PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
Microbiology Labs
In order for directed research to fulfill one of the two required labs, 6 credits of MICB 4994 and/or 4794W must be completed over the course of two or more semesters. Directed research may only count for one lab. Students may use a maximum of seven credits of directed research toward a CBS degree.

Take 2 or more course(s) from the following:
- MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
- MICB 4994 - Directed Research (1.0 - 7.0 cr)
- MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)

STEM Electives
Take 7 or more credit(s) from the following:
- BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
- BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- BIOC 4325 - Laboratory in Mass Spectrometry (1.0 cr)
- BIOC 4351 - Protein Engineering (3.0 cr)
- BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
- BIOC 5309 - Biocatalysis and Biodegradation (3.0 cr)
- BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
- BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
- BIOC 5527 - Introduction to Modern Structural Biology (4.0 cr)
- BIOC 5535 - Introduction to Modern Structural Biology - Diffraction (2.0 cr)
- BIOC 5536 - Introduction to Modern Structural Biology - Nuclear Magnetic Resonance (2.0 cr)
- BIOL 4004 - Cell Biology (3.0 cr)
- BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
- CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
- EEB 4611 - Biogeochemical Processes (3.0 cr)
- EEB 5042 - Quantitative Genetics (3.0 cr)
- EEB 5221 - Molecular Evolution (3.0 cr)
- GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
- GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
- GCD 4151 - Molecular Biology of Cancer (3.0 cr)
- GCD 5005 - Computer Programming for Biology (3.0 cr)
- GCD 5036 - Molecular Cell Biology (3.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MICE 5035 - Personal Microbiome Analysis (3.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- PMB 4131 - Prokaryotic Genetics (3.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)
- STAT 4101 - Theory of Statistics I (4.0 cr)
- STAT 4102 - Theory of Statistics II (4.0 cr)
- EEB 3409 - Evolution (3.0 cr) or EEB 5409 - Evolution (3.0 cr)
- PMB 3802 - Field Microbiology at Itasca Biological Research Station (3.0 cr) or PMB 5802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied with the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- GCC 3xxx
- GCC 5xxx
Program Sub-plans
A sub-plan is not required for this program.

Integrated BS/MPH-Environmental Health
The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of a least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus
Microbiology Minor
College of Biological Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 38 to 46

Microbiologists study the structure, function, and interaction of microbes, which make up 60 percent of the earth’s biomass. Regarded by many as the foundation of the biosphere, microbes were likely the first form of life on earth, predating plants and animals by more than three billion years. Microbiologists study the role of microbes, such as bacteria, fungi, and viruses in our world. A key goal of microbiologists today is to find new ways to use microbes to our advantage, such as engineering bacteria to synthesize cancer drugs or clean up toxic waste sites.

Students completing the biology minor are not eligible for the microbiology minor.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

If a student wishes to use VBS 2032 (or a non-majors microbiology course at another institution) to gain admission to the minor, the student should contact the director of Undergraduate Studies for microbiology for approval.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite coursework for admission
These courses are prerequisite coursework for the minor admission courses.

Biology
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
  or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
  or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)

Chemistry
- CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
- CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
- CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
- CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
  or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1066 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
  or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
- CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
- CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Admission Courses
Admission Courses (CBS Students)
- MICB 3301 - Biology of Microorganisms (5.0 cr)
- BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
- BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
  or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
Admission Courses (Non CBS Students)
- MICB 3301 - Biology of Microorganisms (5.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- GCD 3022 - Genetics (3.0 cr)

Minor Requirements
Students who wish to declare a minor in microbiology can do so online at the College of Biological Sciences website. Students majoring in biology may not pursue a minor in microbiology.

Microbiology Minor
Genetics
- BIOL 4003 - Genetics (3.0 cr)
  or GCD 3022 - Genetics (3.0 cr)

Microbiology Lecture
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
- PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
- MICB 4131 - Immunology (3.0 cr)
- MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
- MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
- MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)

Microbiology Lab
It is preferred that students pursuing the microbiology minor complete MICB 4215 or MICB 4225W.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
Twin Cities Campus

Neuroscience B.S.

Neuroscience

College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 83
- Degree: Bachelor of Science

Neuroscience majors study the molecular and cellular building blocks that make up the brain and control its function. The study of neuroscience aims to understand how complex animals, including humans, see, hear, move, think, and feel. Neuroscientists also study abnormalities that cause diseases and mechanisms that underlie pain and addiction.

A BS in neuroscience prepares undergraduates to pursue advanced studies in neuroscience, professional degrees in medicine, or related fields.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research
- BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
- BIOL 1806 - Nature of Life, Part Two (0.5 cr)
- BIOL 2905 - Nature of Life, Part III (0.5 cr)
- BIOL 2906 - Nature of Life, Part IV (0.5 cr)
- or BIOL 3001 - Nature of Science and Research (1.0 cr)
Foundations of Biology
- BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
Quantitative Requirements
- MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- Take 1 or more course(s) from the following:
  - or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
• MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
  or BIOL 3272H - Applied Biostatistics (4.0 cr)
  or BIOL 5272 - Applied Biostatistics (4.0 cr)

Chemistry
Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

or Track 2
This track is allowable for students entering CBS with previous chemistry credit or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)

or Track 2 (Honors Option)
This track is allowable for CBS honors students.
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Physics
PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology
BIOL 3015 - Molecular Biology (2.0 cr)
or BIOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 3022 - Biochemistry for Life Scientists (3.0 cr)
or BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)

Additional Core
Take 1 or more course(s) from the following:
• EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 2005 - Animal Diversity Laboratory (2.0 cr)
• EEB 3409 - Evolution (3.0 cr)
or EEB 5409 - Evolution (3.0 cr)
• EEB 3534 - Biodiversity Science: The origins, maintenance, consequences, detection & assessment of biodiversity [ENV] (3.0 cr)
or EEB 5534 - Biodiversity Sci: The origins, maintenance, consequences, detection and assessment of biodiversity [ENV] (3.0 cr)

Neuroscience Major-specific Requirements
Students may not double dip courses across major requirements.
NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr) or NSCI 2001 - Human Neuroanatomy (without a lab) (3.0 cr)
NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)

Students may use a maximum of seven credits of directed research toward a CBS degree.

Take 3 or more credit(s) from the following:
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
• BIOC 4225 - Laboratory in NMR Techniques (1.0 cr)
• BIOC 4325 - Laboratory in Mass Spectrometry (1.0 cr)
• GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
• GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• GCD 5005 - Computer Programming for Biology (3.0 cr)
• GCD 5111 - Quantitative Fluorescence Microscopy (3.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
• MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
• MICE 5035 - Personal Microbiome Analysis (3.0 cr)
• NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• NSCI 4994 - Directed Research (1.0 - 6.0 cr)
• PHCL 4100 - Laboratory in Molecular Pharmacology (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)

Neuroscience Major Electives

Take 3 or more credit(s) from the following:
• BMEN 5411 - Neural Engineering (3.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 5221 - Molecular Evolution (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• NSC 5203 - Basic and Clinical Vision Science (3.0 cr)
• NSC 5461 - Cellular and Molecular Neuroscience (4.0 cr)
• NSC 5561 - Systems Neuroscience (4.0 cr)
• NSC 5661W - Behavioral Neuroscience [WI] (4.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3505 - Mind and Brain (3.0 cr)
• NSCI 4150 - Advanced Topics in Neuroscience (1.0 - 3.0 cr)
• NSCI 4201 - Neuroscience of Drug Abuse (3.0 cr)
• NSCI 4501 - Neurodegenerative Diseases, Mechanisms to Therapies (3.0 cr)
• PHCL 4343 - Pharmacology of the Synapse (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
• PSY 5062 - Cognitive Neuropsychology (3.0 cr)
• Take 0 - 1 course(s) from the following:
  • GCC 3xxx
  • GCC 5xxx

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Integrated BS/MPH-Environmental Health
The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of at least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant's junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus
Pharmacology Minor
College of Biological Sciences - Adm
College of Biological Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20 to 22

Pharmacology studies how drugs affect biological systems. It is the foundation of medicine, pharmacy, dentistry, veterinary medicine, nursing, and other health care professions. Pharmacology employs scientific principles and techniques of its own, as well as from disciplines such as physiology, biochemistry, cellular and molecular biology, microbiology, immunology, genetics, structural biology, and pathology. The objectives of pharmacology include identifying new targets for therapeutic intervention, developing new therapeutics, and understanding environmental/toxicological implications.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite courses
These courses are prerequisites to required minor coursework.

Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

Chemistry
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Minor Requirements
Students who wish to declare a minor in pharmacology can do so online at the College of Biological Sciences website. The minor requires a minimum of 12 credits.

Pharmacology Minor Required Courses
PHCL 3100 - Pharmacology for Pre-Med and Life Science Students (2.0 cr)
PHCL 2001 - Basic Principles of Pharmacology: A Drug's Fantastic Voyage (2.0 cr)
or PHCL 4001 - Mechanisms of Drug Action (2.0 cr)

Pharmacology Elective Courses
Take 5 - 8 credit(s) from the following:
- PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
- PHCL 4003 - Anti-infective drugs: Drugs that kill invaders (2.0 cr)
- PHCL 4010 - Current Research Topics in Pharmacology (2.0 cr)
- PHCL 4020 - Chemotherapy: from current anticancer drugs to future cancer therapeutics (3.0 cr)
- PHCL 4100 - Laboratory in Molecular Pharmacology (2.0 cr)
- PHCL 4343 - Pharmacology of the Synapse (3.0 cr)
- PHCL 5111 - Pharmacogenomics (3.0 cr)

Directed Research, Directed Study, or Additional Coursework
Take 0 - 3 credit(s) from the following:
- PHCL 4994 - Directed Research (1.0 - 3.0 cr)
- PHCL 4993 - Directed Studies (1.0 - 3.0 cr)
- PHSL 3xxx
- PHSL 4xxx
- PHSL 5xxx
- BIOC 4xxx
- BIOC 5xxx
- BIOL 3xxx
- BIOL 4xxx
- BIOL 5xxx
- NSCI 4xxx
- NSCI 5xxx
- GCD 4xxx
- PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
- PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
- MICB 4131 - Immunology (3.0 cr)
- MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
- MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
- MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
Twin Cities Campus

Plant and Microbial Biology B.S.

Plant and Microbial Biology
College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 70 to 78
- Degree: Bachelor of Science

The plant and microbial biology (PMB) major trains students in all aspects of biology as they pertain to plants and microorganisms. Students have the flexibility to focus their studies on plants, microorganisms, or the interactions between the two, such as symbiotic interactions or pathogenic interactions.

All PMB majors are guaranteed experience in a research laboratory, as long as they show satisfactory progress toward their degree and make arrangements by the middle of their junior year. Current faculty research interests include genomics, gene expression, chromosome structure, plant growth substances, signal transduction, plant responses to stress, metabolic activities during development, molecular evolution and systematics, fungal and plant interactions, bacterial physiology, microbial biotechnological applications, nitrogen fixation by bacteria in symbiosis with plants, microorganisms for biodegradation and bioremediation, molecular methods to detect and assess environmental bacteria, and microbial metagenomics.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 19 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Courses
Nature of Life/Nature of Science and Research
- BIOL 1805 - Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)
- BIOL 1806 - Nature of Life, Part Two (0.5 cr)
- BIOL 2905 - Nature of Life, Part III (0.5 cr)
- BIOL 2906 - Nature of Life, Part IV (0.5 cr)

or
This track (BIOL 3001) is for transfer students only.
- BIOL 3001 - Nature of Science and Research (1.0 cr)

Foundations of Biology
- BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
  or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
  or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)

Quantitative Requirements
- MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Take 1 or more course(s) from the following:
• CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
• MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (4.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
or Track 2
This track is allowable for students entering CBS with previous chemistry credit, or for whom space is not available in the preferred track. Students should speak with a CBS academic advisor to determine eligibility for this track.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
or Track 2 (Honors Option)
This track is allowable for CBS honors students.
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Physics
PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology
BiOL 3015 - Molecular Biology (2.0 cr)
or BiOL 3025 - Molecular Biology and Society [TS] (3.0 cr)
BiOC 3022 - Biochemistry for Life Scientists (3.0 cr)
or BiOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BiOL 4003 - Genetics (3.0 cr)

Evolution and Biodiversity
MICB 3301 - Biology of Microorganisms (5.0 cr)
EEB 3409 - Evolution (3.0 cr)
or EEB 5409 - Evolution (3.0 cr)
PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
or PMB 3002 - Plant Biology: Function (2.0 cr)
with PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)

Ecology or Cell Biology
BiOL 4004 - Cell Biology (3.0 cr)
or EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (4.0 cr)
or EEB 3807 - Ecology (4.0 cr)

Plant and Microbial Biology Major-specific Courses

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Information current as of September 02, 2020
Plant and Microbial Biology Electives
A total of at least 12 elective credits are required. These 12 credits must include at least one course from the Lab/Field Electives list and six credits from the PMB Major Electives list. Any remaining credits can come from any list.

Take 12 or more credit(s) from the following:

Lab/Field Electives
A directed research experience of at least three credits may fulfill this requirement. A maximum of seven directed research credits may be counted toward the degree. Note that while some of these courses appear as options in other areas of the major, any individual course may only fulfill one major requirement.

Take 1 or more course(s) from the following:

- BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
- BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4994 - Directed Research (1.0 - 7.0 cr)
- BIOL 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4994 - Directed Research (1.0 - 7.0 cr)
- COP 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- COP 4994 - Directed Research (1.0 - 7.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4994 - Directed Research (1.0 - 6.0 cr)
- EEB 5605 - Limnology Laboratory (2.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4994 - Directed Research (1.0 - 7.0 cr)
- MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
- MICB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4994 - Directed Research (1.0 - 7.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- NSCI 4994 - Directed Research (1.0 - 6.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4994 - Directed Research (1.0 - 7.0 cr)
- PMB 3802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
  or PMB 5802 - Field Microbiology at Itasca Biological Research Station (3.0 cr)
- PMB 3812 - Field Mycology (3.0 cr)
  or PMB 5812 - Field Mycology (3.0 cr)

PMB Major Electives
The following courses can be used for PMB major elective credit, if not used to fulfill any other major requirements.

Take 6 or more credit(s) from the following:

- BIOL 4004 - Cell Biology (3.0 cr)
- BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
- EEB 3407 - Ecology (3.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- MATH 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
- MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
- MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- PLPA 5203 - Introduction to Fungal Biology (3.0 cr)
- PLPA 5301 - Large Scale Omic Data in Plant Biology (3.0 cr)
- PMB 3002 - Plant Biology: Function (2.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- PMB 3701 - PMB Seminar (1.0 cr)
- PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
- PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
- PMB 4131 - Prokaryotic Genetics (3.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4601 - Topics in Plant Biochemistry (3.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
  or BIOL 5272 - Applied Biostatistics (4.0 cr)
• PMB 3212 - Fungi - A Kingdom of Their Own (3.0 cr)
  or PMB 5212 - Fungi - A Kingdom of Their Own (3.0 cr)
• PMB 4412 - Plant Physiology (3.0 cr)
  or PMB 5412 - Plant Physiology (3.0 cr)
• Take 0 - 6 credit(s) from the following:
  • BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
  • BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
  • BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
  • BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
  • COP 4793W - Writing Intensive Directed Studies [WI] (1.0 - 7.0 cr)
  • COP 4993 - Directed Studies (1.0 - 7.0 cr)
  • EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
  • EEB 4993 - Directed Studies (1.0 - 7.0 cr)
  • GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
  • GCD 4993 - Directed Studies (1.0 - 7.0 cr)
• Other Elective Options
  Take 0 - 4 credit(s) from the following:
  • BIOC 4xxx
  • BIOC 5xxx
  • BIOL 4xxx
  • BIOL 5xxx
  • CHEM 2302 - Organic Chemistry II (3.0 cr)
  • CHEM 2311 - Organic Lab (4.0 cr)
  • CSC 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  • EEB 4xxx
  • EEB 5xxx
  • GCD 4xxx
  • GCD 5xxx
  • MATH 1272 - Calculus II (4.0 cr)
  • MICB 4xxx
  • MICB 5xxx
  • MICS 5035 - Personal Microbiome Analysis (3.0 cr)
  • NSCI 4xxx
  • NSCI 5xxx
  • PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
  • PHYS 1202W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  • PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
  • PMB 3500 - Special Topics in Plant Biology (1.0 - 3.0 cr)
  • STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  • STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
  • EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
  • EEB 3841 - Introduction to Animal Behavior (3.0 cr)
  • EEB 38412W - Introduction to Animal Behavior [WI] (4.0 cr)
• Take 0 - 1 course(s) from the following:
  • GCC 3xxx
  • GCC 5xxx

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
• BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
Program Sub-plans

Integrated BS/MPH-Environmental Health

The College of Biological Sciences (CBS) and the School of Public Health (SPH) offer an early-admission opportunity for eligible CBS students interested in pursuing the Environmental Health MPH degree.

The MPH program in the Division of Environmental Health Sciences emphasizes the scientific, technological, policy, and management skills required to address environmental health concerns. These concerns include investigating health hazards in our environment, protecting worker health, and establishing the basis for public health policy. The Division of Environmental Health is committed to graduating professionals with interdisciplinary training, which includes practicing innovative problem solving, and gaining experience with a diversity of approaches and applications.

To be eligible for this program, applicants must be admitted undergraduate students in the College of Biological Sciences, have completed at least 60+ credits, and have a GPA of at least 3.25.

Students admitted to the Integrated BS/MPH-Environmental Health program take 12 MPH credits during their senior year, and complete the MPH by taking remaining credits as a full-time graduate student in the summer and academic year after completing their undergraduate degree.

Graduate courses cannot be applied toward both BS and MPH credit and degree requirements. Admitted students must maintain timely degree progress to ensure that the BS degree is awarded no later than the end of the senior year.

The application deadline for the Integrated BS/MPH-Environmental Health opportunity is the spring of the applicant’s junior year. Interested students should consult with their CBS academic advisor or School of Public Health for application instructions.
Twin Cities Campus
Plant Biology Minor
Plant and Microbial Biology
College of Biological Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 14 to 16

Plant biologists seek to understand plants and associated organisms, including fungi and algae, at all levels of biological organization, from molecules to ecosystems. Biochemical, physiological, developmental, genetic, evolutionary, and ecological studies of plants are fundamental to improve human welfare and global conditions in the areas of health, food, energy, and environment. Some current examples of research in plant biology include developmental genetics for bioenergy and food production, ecological studies of carbon cycling, evolutionary responses to climate change, cellular responses to pathogens and abiotic stress, natural product discovery, symbiosis, molecular evolution, informatics, and the pursuit of other fundamental questions.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Most courses for the minor require a semester of general biology. Please check individual course options for any other prerequisite coursework.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
General Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

Minor Requirements
The plant biology minor is available to students in the College of Biological Sciences pursuing another major in the college as well as to non-CBS students. Minor courses must be completed A-F and a grade of C- or better is required. Students must take at least one 4xxx or 5xxx course.

Students who wish to declare a minor in plant biology can do so online at the College of Biological Sciences website.

Minor Courses
Up to 4 credits of plant biology directed research (PMB 4994/4794W) and/or directed studies (PMB 4993/4793W) may be used.

Take 10 or more credit(s) from the following:
• PMB 2022 - General Botany (3.0 cr)
• PMB 3002 - Plant Biology: Function (2.0 cr)
• PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• EEB 4068 - Plant Physiological Ecology (3.0 cr)
• FNRM 3104 - Forest Ecology (4.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PMB 4601 - Topics in Plant Biochemistry (3.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 7.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
• PMB 5516 - Plant Cell Biology (3.0 cr)
- PMB 5960 - Special Topics (1.0 - 3.0 cr)
- PLPA 5203 - Introduction to Fungal Biology (3.0 cr)
- PMB 4412 - Plant Physiology (3.0 cr)
  or PMB 5412 - Plant Physiology (3.0 cr)
Twin Cities Campus

University Honors Program

College of Biological Sciences, College of Continuing and Professional Studies, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, Medical School, Curtis L. Carlson School of Management, School of Nursing, College of Science and Engineering

- Program Type: Other
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 7 to 28
- This program is 8 terms (4 years) long.

The University Honors Program is a student-centered place of connection for undergraduate education across the University; a place where our community can come together to innovate, create, lead, and serve; a place that challenges high-ability students to be bold, unconventional thinkers.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

A GPA above 2.0 is preferred for the following:
- 3.50 already admitted to the degree-granting college
- 3.50 transferring from another University of Minnesota college
- 3.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Students admitted to the University Honors Program (UHP) must fulfill UHP requirements, as well as degree program requirements. For any course required in a degree program, UHP students are encouraged to register for the honors version of courses associated with their discipline, when offered. These courses are designed to meet degree and UHP requirements.

To remain in the honors program, students must maintain a grade point average of 3.5 and successfully pass a mid-program evaluation.

First Year

UHP is a student-centered place of connection for undergraduate education across the University; a place where our community can come together to innovate, create, lead, and serve; a place that challenges high-ability students to be bold, unconventional thinkers. NEXUS One serves to provide a guided platform for this experience across all disciplines.

UHP NEXUS One Experience
- All Honors students must participate in a UHP NEXUS One Experience cohort.

General Honors Requirements

Beyond the first and final-year requirements, students must also complete three (3) additional Honors courses, one (1) of which must be an Honors seminar or Grand Challenge course, and five (5) additional Honors experiences (course or non-course). These eight (8) total requirements may be completed at any time once the student has officially matriculated into an undergraduate degree program at the University of Minnesota.

Three Honors Courses
- Three Honors courses (H or V or 6xxx-8xxx level); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC) 3xx-level or above. The following lab courses do not count as separate honors...
experiences: Chem 1075H and Chem 1076H.

Five additional Honors Experiences (course or non-course)
Additional courses beyond 3-required (H or V or 6xxx-8xxx level) - a minimum of 2 credits), Non-course UHP approved-experiences including faculty-sanctioned mentor-supervised independent work, (faculty-directed research or creative activity), internship, Honors courses abroad or an abroad experience with the OLPD3331H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition, completion of CLA 1052 research course, etc.

Final Year - Thesis and Thesis Supporting Coursework
The honors education culminates in the writing of an honors thesis. Through this thesis, students demonstrate mastery of their field of study, along with the ability to think creatively and independently.

Thesis-related coursework
Students must complete any existing capstone course for their major (and all its attendant requirements) as usual. IN ADDITION, they must go beyond this capstone work for the thesis, and must also complete a classroom-based Honors-thesis-support course of at least 1 credit, 1 semester.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
Twin Cities Campus

Applied Business Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 15
• Degree: Applied Business Certificate Ugrd

The certificate in applied business emphasizes utility and relevance. The option for a fully online curriculum makes this certificate among the most accessible of academic business credentials. Based on the recommendations of private, public, and nonprofit employers, the certificate offers specialized focus areas that target professional needs. This approach ensures its immediate applicability and value.

The certificate in applied business allows students to choose one of four focus areas that best complements their career plans:

1. Managing the professional practice
2. Managing in health systems organizations
3. Managing for sustainability, innovation, and quality
4. Self-designed

Program Delivery
This program is available:
• partially online (between 50% to 80% of instruction is online)

Admission Requirements
Students must complete 60 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Complete the certificate within four years of the admission date. With approval of the program, up to 6 credits of the transfer coursework may be used to satisfy requirements for this certificate.

Certificate Requirements
Students complete one of the following area of emphasis:
Managing the professional practice
Managing for sustainability, innovation, and quality
Managing in health systems organizations
Self-designed

1. Managing the Professional Practice (15 cr)
   ABUS 4703 - Marketing for the Professional Practice (3.0 cr)
   ABUS 4705 - Leadership and Management for the Professional Practice (3.0 cr)
   ABUS 4707 - Financial Management for the Professional Practice (3.0 cr)

MPP Electives
Select 6 credits from the following courses.
ABUS 4012 (Inactive)(3.0 cr)
or ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
or ABUS 4023W - Communicating for Results [WI] (3.0 cr)
or ABUS 4043 - Project Management in Practice (3.0 cr)
or ABUS 4501 - Building and Running a Small Business Enterprise (4.0 cr)
or HSM 4043 - Project and Program Management in Health Services Management (3.0 cr)
or ABUS 4045 - Information Privacy and Security in Health Services Management [TS] (3.0 cr)
or HSM 4575 - Innovation in Health Services (3.0 cr)
or 2. Managing for Sustainability, Innovation, and Quality (15 cr)
ABUS 3301 - Introduction to Quality Management (3.0 cr)
ABUS 4041 - Dynamics of Leadership (3.0 cr)
ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
Sustainability, Innovation, and Quality Management Course
ABUS 4022W - Management in Organizations [WI] (3.0 cr)
or HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
or 3. Managing in Health Systems Organizations (15 cr)
ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4541 - Health Care Finance (3.0 cr)
HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
or 4. Self-Designed (15 cr)
With advisor/departmental approval, students may design their own 15 credit area of emphasis. Courses include one required core management course and four electives from applied business or health systems management.
Self-Designed Core Management Course (select one)
ABUS 4022W - Management in Organizations [WI] (3.0 cr)
or ABUS 4041 - Dynamics of Leadership (3.0 cr)
or ABUS 4705 - Leadership and Management for the Professional Practice (3.0 cr)
or HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
Self-Designed Electives
Select 12 credits from the following courses.
ABUS 3301 - Introduction to Quality Management (3.0 cr)
or ABUS 4012 (Inactive) (3.0 cr)
or ABUS 4023W - Communicating for Results [WI] (3.0 cr)
or ABUS 4043 - Project Management in Practice (3.0 cr)
or ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
or ABUS 4104 - Management and Human Resource Practices (3.0 cr)
or ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
or ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
or ABUS 4701 - Introduction to Marketing (3.0 cr)
or ABUS 4703 - Marketing for the Professional Practice (3.0 cr)
or ABUS 4705 - Leadership and Management for the Professional Practice (3.0 cr)
or ABUS 4707 - Financial Management for the Professional Practice (3.0 cr)
or HSM 3521 - Health Care Delivery Systems (3.0 cr)
or HSM 4043 - Project and Program Management in Health Services Management (3.0 cr)
or HSM 4065 - Information Privacy and Security in Health Services Management [TS] (3.0 cr)
or HSM 4301 - Health Care Quality & Patient Safety Management (3.0 cr)
or HSM 4541 - Health Care Finance (3.0 cr)
or HSM 4575 - Innovation in Health Services (3.0 cr)
or Leadership
ABUS 4041 - Dynamics of Leadership (3.0 cr)
or HSM 4041 - Leadership in Health Services Management (3.0 cr)
Twin Cities Campus
Construction Management B.A.Sc.
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 86 to 89
- Degree: Bachelor of Applied Science

Construction management transforms project design and its engineering requirements into a physical structure, focusing on management and business skills needed to deliver high quality construction results on time and within budget. The major offers experience and education leading directly to a professional management career in high demand areas in the construction industry, including residential, commercial, industrial, institutional, highway heavy, facility management, and process systems sectors. The construction management major is offered in close collaboration with the Minnesota and regional construction industry.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Students who have 30 transferable semester credits, preferred minimum 2.50 GPA, and a strong interest in the major may be admitted to pre-major status.

Each application for admission is individually reviewed in a holistic context.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Courses
Mathematics
- MATH 1042 - Mathematics of Design [MATH] (4.0 cr)
- or MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Physics
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
- or PHYS 1107 - Introductory Physics Online I [PHYS] (4.0 cr)
- or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Building Construction Plan Reading
- CMGT 3011 - Construction Plan Reading (2.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Preparatory Courses for All Subplans
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
CMGT 3001W - Introduction to Construction [WI] (3.0 cr)

Technical Writing
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- or WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- or PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
- or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Public Speaking or Interpersonal Communication
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
- or COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)
- or COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- or COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)

Economics
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1102 - Principles of Macroeconomics (3.0 cr)
- or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or ECON 1102 - Principles of Macroeconomics (4.0 cr)
- or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Introduction to Management
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- or MGMT 3001 - Fundamentals of Management (3.0 cr)

Major Core Courses
Student must take CMgt 4196: Construction Management Internship. Two additional internships can be taken as electives for a total of 3 credits.
- ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
- ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
- ABUS 4701 - Introduction to Marketing (3.0 cr)
- CMGT 4011 - Construction Documents and Contracts (3.0 cr)
- CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
- CMGT 4022 - Construction Estimating (3.0 cr)
- CMGT 4031 - Construction Safety and Loss Control (3.0 cr)
- CMGT 4041W - Specifications and Technical Writing for Construction Professionals [WI] (3.0 cr)
- CMGT 4196 - Construction Management Internship (1.0 cr)
- CMGT 4471 - Sustainability for Construction Managers (2.0 cr)
- CMGT 4861 - Construction Management Capstone (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other requirements.
Take 0 - 1 course(s) from the following:
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
- CMGT 4041W - Specifications and Technical Writing for Construction Professionals [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Commercial
Preparatory Courses
- CMGT 2019 - AutoCAD for Construction Managers (2.0 cr)

Required Courses
- CEGE 3202 - Surveying & Mapping (2.0 cr)
- CMGT 4201 - Construction Accounting (2.0 cr)
- CMGT 4542 - Building Energy Systems (3.0 cr)
CMGT 4544 - Materials and Structures I (4.0 cr)
CMGT 4545 - Materials and Structures II (4.0 cr)
CMGT 4562 - Building Envelope Design and Construction (2.0 cr)

Commercial Technical Electives
Student must complete a total of 8 credits selected from Construction Science and/or Other.

Construction Science
ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
or
BBE 3101 - Introductory Statics and Structures for Construction Management (3.0 cr)
or
BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
or
CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
or
CEGE 4401 - Steel and Reinforced Concrete Design (4.0 cr)
or
CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
or
CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
or
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
or
LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)
or
SSM 4416 - Building Testing and Diagnostics (2.0 cr)
or
Other
ABUS 4104 - Management and Human Resource Practices (3.0 cr)
or
ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
or
CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)
or
CMGT 4001 - Innovative Contracting (1.0 cr)
or
CMGT 4002 - Lean Construction (1.0 cr)
or
CMGT 4003 - Managing with Building Information Modeling (2.0 cr)
or
CMGT 4193 - Directed Study (1.0 - 4.0 cr)
or
CMGT 4196 - Construction Management Internship (1.0 cr)
or
CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
or
CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)
or
Other electives from related departments with adviser approval.

Environmental Health and Safety
Preparatory Courses
CMGT 4031 - Construction Safety and Loss Control (3.0 cr)
CMGT 4542 - Building Energy Systems (3.0 cr)

Required Courses
CMGT 4301 - Introduction to Environmental Health & Safety (3.0 cr)
CMGT 4302 - Environmental Health Principles (3.0 cr)
CMGT 4303 - Industrial Hygiene Principles (3.0 cr)
CMGT 4304 - Fire and Life Safety Principles (3.0 cr)
CMGT 4305 - Health and Safety Planning and Management (3.0 cr)

Environmental Health & Safety Technical Electives
Take 6 or more credits.
CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
or
CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
or
CMGT 4193 - Directed Study (1.0 - 4.0 cr)
or
CMGT 4196 - Construction Management Internship (1.0 cr)
or
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
or
CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)
or
SSM 4416 - Building Testing and Diagnostics (2.0 cr)
or
EHS electives available in 2020: CMgt 4306-Building Code Nonstructural Principles and Applications;
CMgt 4307-Mechanical & Electrical Codes & Safety Principles;
CMgt 4308-Fire Code & Protection Systems Principles & Applications
or
Electives from related departments with adviser approval.

Facility Management
Preparatory Courses
ABUS 4104 - Management and Human Resource Practices (3.0 cr)
CMGT 3024W - Facility Programming and Design [WI] (2.0 cr)

Required Courses
ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
ABUS 4211 - Facility Asset Management, Finance, and Budgeting (2.0 cr)
ABUS 4213 - Fundamentals of Facility Management (3.0 cr)
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
CMGT 4542 - Building Energy Systems (3.0 cr)
CMGT 4562 - Building Envelope Design and Construction (2.0 cr)

Facility Management Technical Electives

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Information current as of September 02, 2020
Student must complete a total of 8 credits of Technical Electives.

**BBE 3101 - Introductory Statics and Structures for Construction Management (3.0 cr)**
or **BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)**
or **CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)**
or **CMGT 4001 - Innovative Contracting (1.0 cr)**
or **CMGT 4002 - Lean Construction (1.0 cr)**
or **CMGT 4003 - Managing with Building Information Modeling (2.0 cr)**
or **CMGT 4073 - Building Codes for Construction Managers (1.0 cr)**
or **CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)**
or **CMGT 4193 - Directed Study (1.0 - 4.0 cr)**
or **CMGT 4196 - Construction Management Internship (1.0 cr)**
or **CMGT 4544 - Materials and Structures I (4.0 cr)**
or **CMGT 4545 - Materials and Structures II (4.0 cr)**
or **CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)**
or **CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)**
or **LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)**
or **SSM 4416 - Building Testing and Diagnostics (2.0 cr)**
or Electives from related departments with adviser approval.

**Highway Heavy and Civil Works**

**Preparatory Courses**

**CMGT 2019 - AutoCAD for Construction Managers (2.0 cr)**

**Required Courses**

**CEGE 3201 - Transportation Engineering (3.0 cr)**
**CEGE 3202 - Surveying & Mapping (2.0 cr)**
**CEGE 4201 - Principles of Highway Design (3.0 cr)**
**CMGT 4201 - Construction Accounting (2.0 cr)**
**CMGT 4545 - Materials and Structures II (4.0 cr)**

**Highway Heavy & Civil Works Technical Electives**

Student must complete a total of 11 credits selected from Construction Science and Other.

**Construction Science**

**BBE 3101 - Introductory Statics and Structures for Construction Management (3.0 cr)**
or **CEGE 3301 - Soil Mechanics I (3.0 cr)**
or **CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)**
or **CEGE 3502 - Fluid Mechanics (4.0 cr)**
or **CEGE 4253 - Pavement Engineering and Management (3.0 cr)**
or **CEGE 4501 - Hydrologic Design (4.0 cr)**
or **CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)**
or **LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)**
or **SSM 4416 - Building Testing and Diagnostics (2.0 cr)**
or Electives from related departments with adviser approval.

**Other**

Student may select additional courses from this group.

**CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)**
or **CMGT 4001 - Innovative Contracting (1.0 cr)**
or **CMGT 4002 - Lean Construction (1.0 cr)**
or **CMGT 4003 - Managing with Building Information Modeling (2.0 cr)**
or **CMGT 4193 - Directed Study (1.0 - 4.0 cr)**
or **CMGT 4196 - Construction Management Internship (1.0 cr)**
or **CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)**
or **CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)**
or **HRIR 3021 - Human Resource Management and Strategy (3.0 cr)**
or Electives from related departments with adviser approval.

**Residential**

**Preparatory Courses**

**CMGT 2019 - AutoCAD for Construction Managers (2.0 cr)**
**CMGT 4544 - Materials and Structures I (4.0 cr)**
or **AEM 2021 - Statics and Dynamics (4.0 cr)**

**Required Courses**

**SSM 4413 - Systems Approach to Residential Construction (4.0 cr)**
**SSM 4414 - Advanced Residential Building Science (4.0 cr)**
**SSM 4416 - Building Testing and Diagnostics (2.0 cr)**
**CMGT 4201 - Construction Accounting (2.0 cr)**
**CMGT 4545 - Materials and Structures II (4.0 cr)**

**Residential Technical Electives**

Student must complete a total of 5 credits selected from Construction Science and/or Other.

**Construction Science**
ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
or BBE 3101 - Introductory Statics and Structures for Construction Management (3.0 cr)
or BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
or CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
or CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
or LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)
or Other
ABUS 4104 - Management and Human Resource Practices (3.0 cr)
or ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
or CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)
or CMGT 4001 - Innovative Contracting (1.0 cr)
or CMGT 4002 - Lean Construction (1.0 cr)
or CMGT 4003 - Managing with Building Information Modeling (2.0 cr)
or CMGT 4193 - Directed Study (1.0 - 4.0 cr)
or CMGT 4196 - Construction Management Internship (1.0 cr)
or CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
or CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)
or Electives from related departments with adviser approval.
Twin Cities Campus
Construction Management Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 19
- Degree: Construction Management Certificate

This undergraduate certificate will give you an in-depth understanding of the design and technology framework and the communication and management skills required for your career advancement. Designed and taught by industry professionals, the program is for people interested in a career as a construction manager or industry professional who want to increase their knowledge of new technologies or improve their management and communication skills.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
With approval of the program, up to 7 credits of transfer course work may be used to satisfy requirements for this certificate.

Certificate Requirements
CMGT 3001W - Introduction to Construction [WI] (3.0 cr)
CMGT 4011 - Construction Documents and Contracts (3.0 cr)
CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
CMGT 4022 - Construction Estimating (3.0 cr)
CMGT 4031 - Construction Safety and Loss Control (3.0 cr)
CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
CMGT 4861 - Construction Management Capstone (3.0 cr)
Twin Cities Campus

Construction Management Minor
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 19

A minor in construction management provides foundation knowledge, industry insight, and business competencies essential in the construction sector. The facility management option provides core competencies for ensuring functionality of the built environment.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
With approval of the program, up to 7 credits of transfer coursework may be used to satisfy requirements for this minor.

Program Sub-plans
Students are required to complete one of the following sub-plans.

General Construction Management
Required Courses
CMGT 3001W - Introduction to Construction [WI] (3.0 cr)
CMGT 4011 - Construction Documents and Contracts (3.0 cr)
CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
CMGT 4022 - Construction Estimating (3.0 cr)
CMGT 4031 - Construction Safety and Loss Control (3.0 cr)
CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
CMGT 4861 - Construction Management Capstone (3.0 cr)

Facility Management
Required Courses
CMGT 3024W - Facility Programming and Design [WI] (2.0 cr)
CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
CMGT 4022 - Construction Estimating (3.0 cr)
ABUS 4211 - Facility Asset Management, Finance, and Budgeting (2.0 cr)
ABUS 4213 - Fundamentals of Facility Management (3.0 cr)
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
CMGT 4861 - Construction Management Capstone (3.0 cr)
Twin Cities Campus

Dakota Language Teaching Certificate

CCAPS Certificate Programs

College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 18
- Degree: Dakota Language Teaching Certificate

The Dakota Language Teaching Certificate was designed to address the critical point of Dakota language loss in Minnesota by developing a cadre of Dakota language learners, speakers, and teachers. This effort is part of a global indigenous language revitalization movement based on the understanding that language is fundamental to cultural survival and tribal sovereignty.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 4 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Admission Requirements
To be admitted into the Dakota language teaching certificate program, you must:

- Complete 4 semesters of Dakota language at the University of Minnesota
- OR Pass the Dakota Proficiency Test administered by the Dakota language instructor.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must complete the certificate within four years of the admission date. With approval of the program, up to 7 credits of transfer coursework may be used to satisfy requirements for this certificate.

Certificate Requirements

Core Courses
- DAKO 5126 - Advanced Dakota Language I (3.0 cr)
- DAKO 5129 - Advanced Dakota Language II (3.0 cr)
- DAKO 3125 - Introduction to Dakota Linguistics (3.0 cr)
- DAKO 3127 - Dakota Language for Teachers (3.0 cr)

Field Study
3 credits of Field Study is required
- AMIN 4996 - Field Study (1.0 - 12.0 cr)

Electives
- AMIN 3141 - American Indian Language Planning (3.0 cr)
Twin Cities Campus
Facility Management Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 19
- Degree: Facility Management Certificate

The facility management certificate offers a comprehensive, multidisciplinary program in which students study the complete building life cycle, from design inception and construction to maintenance, recommissioning, and demolition, with the objective of serving on the owner's side to develop, construct, and maintain buildings for the long term.

Program Delivery
This program is available:
- partially online (between 50% to 80% of instruction is online)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
With the approval of the program, up to 7 credits of transfer coursework may be used to satisfy requirements for this certificate.

Certificate Requirements
- CMGT 3024W - Facility Programming and Design [WI] (2.0 cr)
- CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
- CMGT 4022 - Construction Estimating (3.0 cr)
- CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
- ABUS 4211 - Facility Asset Management, Finance, and Budgeting (2.0 cr)
- ABUS 4213 - Fundamentals of Facility Management (3.0 cr)
- CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
- CMGT 4861 - Construction Management Capstone (3.0 cr)
Twin Cities Campus
Health and Wellbeing Sciences B.S.
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 65 to 86
• Degree: Bachelor of Science

The Health and Wellbeing Sciences major is a broadly interdisciplinary, individualized bachelor of science degree. The lower division preparatory requirements and the upper division core curriculum include the foundational biological, physical, and social sciences relevant to health and wellbeing in the 21st century. Working closely with an adviser, students personalize their degree plan to meet their individual interests and professional goals. Through both core requirements and customized course selections, students can complete prerequisites for graduate and professional school programs or prepare for direct entry into a health- and wellbeing-related field. Students write a proposal paper documenting their course choices, relevant goals, and background experiences that support those choices.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 30 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

Completion of prerequisite courses (or in progress): biology, chemistry, economics, nutrition, and psychology/sociology, with a grade of C- or better. Admission is based on individual review of a student's application for program match. First steps include attending a program information session and initial degree-planning appointment with an adviser.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must earn 50 upper division credits in the degree. At least half of the upper division credits required for the major must be taken at University of Minnesota-Twin Cities. (25crs)

Proposal Development Seminar Course
IOP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)

Foundation Prerequisites
A grade of C- or better is required in each of these courses.

Biology
PSTL 1135 is acceptable IF already taken.
BIOL 1009 - General Biology [BIOL] (4.0 cr)

Chemistry
Chemistry Option A

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CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or Chemistry Option B
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOS 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or Chemistry Option C
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
Economics
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1102 - Principles of Macroeconomics (3.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1102 - Principles of Macroeconomics (4.0 cr)
Nutrition
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
Social Science
ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
or EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
or FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
or FSOS 1201 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
or GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
or PSTL 1211 - Sociological Perspectives: A Multicultural America [DSJ, SOCS] (4.0 cr)
or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
Career Readiness
ABUS 3051 - Career Search for the Professional Environment (2.0 cr)
or AHS 2400 - Writing a Personal Statement (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
or CFAN 3201 - Career and Internship Preparation (1.0 cr)
or CFAN 3202 - Career and Internship Preparation (1.0 cr)
or CLA 3201 - Career Planning: Preparing for Your Post-Graduation Plans (2.0 cr)
Core Courses
Students must complete a minimum of 29 upper division credits within the Core by choosing one course from each category. Courses are chosen in consultation with an adviser. Must earn a grade of C- or better in all courses and maintain a minimum 2.00 GPA.
Anatomy
ANAT 3001 - Human Anatomy (3.0 cr)
or ANAT 3801 - Principles of Human Anatomy (3.0 cr)
or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
or KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
Communication
ABUS 4023W - Communicating for Results [WI] (3.0 cr)
or ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
or PHAR 3206 - Foundations of Health Literacy (3.0 cr)
or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
or WRIT 3221W - Communication Modes and Methods [WI] (3.0 cr)
or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
or WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
or WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
Ethics
BTHX 5100 - Introduction to Clinical Ethics (3.0 cr)
or BTHX 5300 - Foundations of Bioethics (3.0 cr)
or NURS 4402 - Taking Ethical Action in Health Care [CIV] (1.0 cr)
or PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
or PHIL 3305 - Medical Ethics (4.0 cr)
or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
or PHAR 4204W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
Health and Fitness
KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)

Integrative Health
CSPH 1001 - Principles of Holistic Health and Healing (2.0 cr)
or CSPH 3001 - Introduction to Integrative Healing (3.0 cr)
or CSPH 5101 - Introduction to Integrative Healing Practices (3.0 cr)

Management/Economics
ABUS 4022W - Management in Organizations [WI] (3.0 cr)
or ABUS 4501 - Building and Running a Small Business Enterprise (4.0 cr)
or ABUS 4705 - Leadership and Management for the Professional Practice (3.0 cr)
or ABUS 4707 - Financial Management for the Professional Practice (3.0 cr)
or HSM 3521 - Health Care Delivery Systems (3.0 cr)
or HSM 4541 - Health Care Finance (3.0 cr)
or HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
or MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
or PUBH 3901 - Health Economics and Policy (3.0 cr)

Nutrition
CSPH 3301 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)
or CSPH 5431 - Functional Nutrition: An Expanded View of Nutrition, Chronic Disease, and Optimal Health (2.0 cr)
or FSCN 3612 - Life Cycle Nutrition (3.0 cr)
or FSCN 3614 - Nutrition Education and Counseling (3.0 cr)
or FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
or FSCN 4612W - Advanced Human Nutrition [WI] (4.0 cr)
or FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
or PUBH 3905 (Inactive) (2.0 cr)

Pathology
LAMP 4177 - Nature of Disease: Pathology for Allied Health Students (3.0 cr)

Physiology
BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
or KIN 3385 - Human Physiology (4.0 cr)
or PHSL 3051 - Human Physiology (4.0 cr)
or PHSL 3061 - Principles of Physiology (4.0 cr)

Public Health
PUBH 3001 - Personal and Community Health (2.0 cr)
or PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)

Statistics
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or NURS 3710 - Statistics for Clinical Practice and Research [MATH] (3.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

Terminology
PHAR 1002 - Medical Terminology (2.0 cr)
or PHAR 5201 - Applied Medical Terminology (2.0 cr)

Upper Division Health and Wellbeing Sciences Emphasis and Supporting Credits
To reach the 50 upper division credits required for the major, students must select 12-16 credits within the emphasis or related supporting courses (see adviser). Must earn C- or better in all plus overall GPA 2.0 or higher. Examples include Addiction Studies, Business/Marketing Ed, Comm & Languages, Integrative Med/Holistic Health & Healing, Health Services Mgmt, Life Science, Nutrition, Pharmacology, Public Health, Human Sexuality, Social Sciences, Social Work, Youth Studies.

Writing Requirement
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other requirements.
Take 0 - 1 course(s) from the following:
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
- FSCN 4612W - Advanced Human Nutrition [WI] (4.0 cr)
- FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
- HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
• ICP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRIT 3221W - Communication Modes and Methods [WI] (3.0 cr)
• WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
Twin Cities Campus
Health Services Management B.A.Sc.
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 77 to 79
- Degree: Bachelor of Applied Science

Health care continues to be one of the largest areas of growth of hiring in the United States. This major offers experience and education in support of many opportunities in health care management. It provides career training for undergraduates leading to entry-level positions in medical office management, long-term care administration, patient accounting systems, and many other related fields. Students will gain a conceptual understanding of business and the health care industry, along with analytical and problem-solving skills, to apply that knowledge in a variety of settings. The major's core content includes the following health care areas: leadership and management, quality management, health care economics and finance, legal aspects, health informatics, human resources, medical ethics, and program evaluation. The major may be customized with technical electives in areas such as health and wellness, long-term care administration, private practice management, health informatics, or interpreting. An applied internship experience is required, along with a career planning course. The major will also interest individuals already employed in the industry who need additional skills for professional advancement. Finally, it can serve as excellent preparation for many graduate programs. The major builds upon the breadth, quality, and variety of courses in the CCAPS Applied Business (ABus) and Health Services Management (HSM) offerings as well as departmental courses through the School of Public Health, College of Pharmacy, Institute of Health Informatics, and the Center for Spirituality and Healing, among others.

Program Delivery
This program is available:
- partially online (between 50% to 80% of instruction is online)

Admission Requirements
Students must complete 45 credits before admission to the program.

Transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.80 already admitted to the degree-granting college
- 2.80 transferring from another University of Minnesota college
- 2.80 transferring from outside the University

Students who have 30 transferable semester credits, preferred minimum 2.8 GPA, and a strong interest in the major may be admitted to pre-major status.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Admission Requirements
These courses must be completed or in progress for major status admission.

Microeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Statistics
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
  or SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
  or SOC 3811 - Social Statistics [MATH] (4.0 cr)
  or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Oral Communication
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  or APEC 1251 - Principles of Accounting (3.0 cr)

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Information current as of September 02, 2020
Personal and Community Health
PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
or
Personal and Community Health Two-Course Set
PUBH 3001 - Personal and Community Health (2.0 cr)
PUBH 3003 - Fundamentals of Alcohol and Drug Abuse (2.0 cr)

Health Sciences Terminology
PHAR 1002 - Medical Terminology (2.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least half of the upper division credits required for the major must be taken at University of Minnesota Twin Cities. (29crs)

Core Courses
HSM 3051 - Career and Internship Skills in Health Services Management (2.0 cr)
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4041 - Leadership in Health Services Management (3.0 cr)
HSM 4301 - Health Care Quality & Patient Safety Management (3.0 cr)
HSM 4531 - Human Resources in Health Care Settings (3.0 cr)
HSM 4541 - Health Care Finance (3.0 cr)
HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
HSM 4591 - Health Care Law and Ethics (3.0 cr)
HSM 4596 - Health Services Management Internship (1.0 cr)
HSM 4861 - Leadership and Business Planning in Health Care: Capstone (3.0 cr)
PUBH 3801 - Health Economics and Policy (3.0 cr)

Basic Skills
Choose one. The remaining two could become electives.
ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
or
HSM 4043 - Project and Program Management in Health Services Management (3.0 cr)
or
HSM 4575 - Innovation in Health Services (3.0 cr)

Health Information Science
Choose one. The other could become an elective.
HINF 5430 - Foundations of Health Informatics I (3.0 cr)
or
HSM 4065 - Information Privacy and Security in Health Services Management [TS] (3.0 cr)

Major Electives
Consult your adviser for other 3xxx or 4xxx electives in business and/or health care that are not on this list but may also be approved. The 4 TRIN courses can count toward an 18-cr Certificate in Interpreting.

Take 22 or more credit(s) from the following:
• ABUS 3510 - Communicating Virtually Across Global Teams in Applied Business Settings (4.0 cr)
• ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
• ABUS 4022W - Management in Organizations [WI] (3.0 cr)
• ABUS 4023W - Communicating for Results [WI] (3.0 cr)
• ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
• ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
• ABUS 4211 - Facility Asset Management, Finance, and Budgeting (2.0 cr)
• ABUS 4501 - Building and Running a Small Business Enterprise (4.0 cr)
• ABUS 4509 - New Product Development (3.0 cr)
• ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
• ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
• ABUS 4701 - Introduction to Marketing (3.0 cr)
• ABUS 4703 - Marketing for the Professional Practice (3.0 cr)
• ABUS 4705 - Leadership and Management for the Professional Practice (3.0 cr)
• ABUS 4707 - Financial Management for the Professional Practice (3.0 cr)
• ABUS 4709 - Managing the Professional Practice I: Business Design (3.0 cr)
• ABUS 4711 - Managing the Professional Practice II: Operations (3.0 cr)
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• ADDS 5011 - Foundations in Addiction Studies (2.0 cr)
• ADDS 5071 - Foundations of Co-occurring Disorders (2.0 cr)
• AHS 3101 - The New Health Professions Team (2.0 cr)
• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
• APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• CSBH 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSBH 3001 - Introduction to Integrative Healing (3.0 cr)
• CSBH 3101 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)
• CSBH 5000 - Explorations in Integrative Therapies and Healing Practices (1.0 - 4.0 cr)
• CSBH 5111 - Ways of Thinking about Health (2.0 cr)
• CSBH 5115 - Cultural Awareness, Knowledge and Health (3.0 cr)
• CSBH 5121 - Whole Systems Healing: Health and the Environment (2.0 cr)
• CSBH 5521 - Therapeutic Landscapes (3.0 cr)
• CSBH 5711 - Optimal Healing Environments (3.0 cr)
• CSBH 5805 - Wellbeing in the Workplace (3.0 cr)
• ECON 3101 - Intermediate Microeconomics (4.0 cr)
• ECON 5890 - Economics of the Health-Care System (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
• FSCN 5601 - Management of Eating Disorders (3.0 cr)
• GCC 3007 - Toward Conquest of Disease [ENV] (3.0 cr)
• GCC 5003 - Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GERO 5125 - Gerontology Service Learning (3.0 cr)
• GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
• HINF 5430 - Foundations of Health Informatics I (3.0 cr)
• HINF 5501 - US Health Care System: Information Challenges in Clinical Care (1.0 cr)
• HINF 5502 - Python Programming Essentials for the Health Sciences (1.0 cr)
• HINF 5510 - Applied Health Care Databases: Database Principles and Data Evaluation (3.0 cr)
• HINF 5531 - Health Data Analytics and Data Science (3.0 cr)
• HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
• HMED 3002W - Health Care in History II [HIS, WI] (4.0 cr)
• HMED 3075 - Technology and Medicine in Modern America [HIS, TS] (3.0 cr)
• HSM 3040 - Dying and Death in Contemporary Society: Implications for Intervention (2.0 cr)
• HSM 4043 - Project and Program Management in Health Services Management (3.0 cr)
• HSM 4065 - Information Privacy and Security in Health Services Management [TS] (3.0 cr)
• HSM 4572 - Gerontology and Geriatrics for Health Services Executives (3.0 cr)
• HSM 4573 - Long Term Care Regulatory Management and Law (3.0 cr)
• HSM 4575 - Innovation in Health Services (3.0 cr)
• HSM 4582 - Practicum in Long Term Care (1.0 cr)
• IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)
• IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
• JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
• JOUR 5541 - Mass Communication and Public Health (3.0 cr)
• JOUR 5543 - Public Health Campaign Evaluation (3.0 cr)
• LAW 3000 - Introduction to American Law and Legal Reasoning (3.0 cr)
• LAW 3050 - Law of Business Organizations (3.0 cr)
• LAW 5061 - Financial Regulation (3.0 cr)
• LAW 5062 - Energy Law (3.0 cr)
• LAW 5076 - Essentials of Business for Lawyers (3.0 cr)
• LAW 5100 - Taxation I (3.0 cr)
• LAW 5103 - Data Privacy Law (3.0 cr)
• LAW 5601 - International Business Transactions (3.0 cr)
• LAW 5608 - Trademarks (3.0 cr)
• LAW 5613 - Copyright (3.0 cr)
• LAW 5908 - Independent Research and Writing (1.0 - 2.0 cr)
• LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
• LEAD 3971 - Leadership Minor: Field Experience (3.0 cr)
• LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MGMT 3004 - Business Strategy (3.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• MGMT 4000 - Understanding the International Environment of Firms: International Business (2.0 cr)
• MGMT 4008 - Entrepreneurial Management (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
• MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
• MILI 3585 - Navigating the Healthcare Marketplace with Economic, Social and Policy Lenses [SOCS] (3.0 cr)
• MILI 3589 - Medical Technology and Society [TS] (3.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• MKTG 4050 - Advertising and Promotion (4.0 cr)
• OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
• OLPD 3318 - Introduction to Project Management (3.0 cr)
• OLPD 3332 - Global Identity: Connecting Your International Experience to Your Future (1.0 cr)
• OLPD 3641 - Introduction to Organization Development (3.0 cr)
• OLPD 3828 - Diversity in the Workplace (3.0 cr)
• OLPD 4301 - Global Youth Leadership and Community Engagement (6.0 cr)
• OLPD 4318 - Advanced Project Management (3.0 cr)
• OLPD 5208 - Special Topics: Organizational Leadership, Policy, & Development (1.0 - 3.0 cr)
• OLPD 5395 - Problems: Organizational Leadership, Policy, and Development (1.0 - 3.0 cr)
• OLPD 5323 - Women in Leadership (3.0 cr)
• OLPD 5607 - Organization Development (3.0 cr)
• PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
• PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• PA 4190 - Topics in Public and Nonprofit Leadership and Management (1.0 - 3.0 cr)
• PA 5451 - Immigration, Health and Public Policy (3.0 cr)
• PHAR 4204W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
• PHIL 3305 - Medical Ethics (4.0 cr)
• PUBH 3601 - Maternal and Child Health Global Public Health Issues (2.0 cr)
• PUBH 3905 - Inactive (2.0 cr)
• PUBH 3954 - Personal, Social, and Environmental Influences on the Weight-Related Health of Pediatric Populations (2.0 cr)
• PUBH 6535 - Managerial Accounting for Health Services (3.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)
• SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
• TRIN 1201 - Health Care Terms and Concepts for Interpreters (3.0 cr)
• TRIN 3101 - Introduction to Interpreting (3.0 cr)
• TRIN 3102 - Consecutive Interpreting (3.0 cr)
• TRIN 4201 - Interpreting in Health Care Settings (3.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
• WRIT 4562 - International Professional Communication (3.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
• WRIT 4664W - Science, Medical, and Health Writing [WI] (3.0 cr)

Color of Public Policy
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)

**Entrepreneurship**
- IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)

**Environment and Development in the Third World**
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)

**Finance Fundamentals**
- FINA 3001 - Finance Fundamentals (3.0 cr)
- FINA 3001H - Honors: Finance Fundamentals (3.0 cr)

**Gender and Family in the Islamic World**
- GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)

**HR Management & Industrial Relations**
- HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
- HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
- IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

**Information Technology in Business**
- IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
- IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

**Population in an Interacting World**
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)

**Sexuality and Culture**
- CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

**Stuffed and Starved: The Politics of Eating**
- GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- GLOS 3613W - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)

**World Population Problems**
- SOC 3511 - World Population Problems [GP] (3.0 cr)
- SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)

**Writing Requirements**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other requirements.

Take 0 - 1 course(s) from the following:
- ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
- APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
- CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
- HMED 3002W - Health Care in History II [HIS, WI] (4.0 cr)
- HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
- LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
- MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
- MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
- MLSP 5011W - Professional Issues in the Health Care Community [WI] (2.0 cr)
- PHAR 4204W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- WRIT 4664W - Science, Medical, and Health Writing [WI] (3.0 cr)
- CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
Twin Cities Campus
Health Services Management Certificate
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 21 to 22

The health services management certificate provides an option for current members of the health services workforce who need additional credentials and/or content knowledge for career advancement. Through a focused grouping of courses, students will gain conceptual understanding of business and management aspects of the health care industry along with analytical and problem-solving skills to apply that knowledge in a variety of settings.

Program Delivery
This program is available:
• partially online (between 50% to 80% of instruction is online)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.80 already admitted to the degree-granting college
• 2.80 transferring from another University of Minnesota college
• 2.80 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
With approval of the program, up to 8 credits of the transfer coursework may be used to satisfy requirements for this certificate.

Required Courses
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4301 - Health Care Quality & Patient Safety Management (3.0 cr)
HSM 4531 - Human Resources in Health Care Settings (3.0 cr)
HSM 4541 - Health Care Finance (3.0 cr)
HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
HSM 4591 - Health Care Law and Ethics (3.0 cr)

Accounting Course
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or APEC 1251 - Principles of Accounting (3.0 cr)
Twin Cities Campus
Health Services Management Minor
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 21 to 22

The health services management minor provides an option for undergraduates who want to add a health services management concentration to their existing degree plan. Students will gain a conceptual understanding of business and management aspects of the health care industry along with analytical and problem-solving skills to apply that knowledge in a variety of settings.

Program Delivery
This program is available:
- partially online (between 50% to 80% of instruction is online)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.80 already admitted to the degree-granting college
- 2.80 transferring from another University of Minnesota college
- 2.80 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Required Courses
- HSM 3521 - Health Care Delivery Systems (3.0 cr)
- HSM 4301 - Health Care Quality & Patient Safety Management (3.0 cr)
- HSM 4531 - Human Resources in Health Care Settings (3.0 cr)
- HSM 4541 - Health Care Finance (3.0 cr)
- HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
- HSM 4591 - Health Care Law and Ethics (3.0 cr)

Accounting Course
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  or APEC 1251 - Principles of Accounting (3.0 cr)
Twin Cities Campus

Information Technology Infrastructure B.A.Sc.
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 89 to 98
- Degree: Bachelor of Applied Science

Information technology infrastructure (ITI) concerns the design, construction, and management of technology operations. The ITI major is the study and application of this knowledge to the needs of businesses and organizations. The curriculum combines a strong foundation in systems, networks, data, security, and the software service lifecycle with essential applied business courses. The ITI major prepares students for a variety of positions in industry, government, and business that involve computer technology processes, policies, components, and services.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

Transfer students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Students who have 30 transferable semester credits, preferred minimum 2.50 GPA, and a strong interest in the major may be admitted to pre-major status.

Each application for admission is individually reviewed in a holistic context.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Courses
In regard to CSci courses: take CSci 1913 + [1103 or 1113] unless you are planning to take advanced CSci coursework. In that case, take CSci 1933 + 1133. All students must take CSci 2021.

Algorithms & Data Structures
- CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
- or CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Mathematics
- MATH 1042 - Mathematics of Design [MATH] (4.0 cr)
- or MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Machine Architecture
- CSCI 2021 - Machine Architecture and Organization (4.0 cr)

Physics
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
- or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Programming
- CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
- or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
- or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least half of the upper division credits required for the major must be taken at University of Minnesota Twin Cities. (25crs)

### Preparatory Courses
Take WRIT 1301 or WRIT 1401 for Freshman Composition.

### Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)

### C Programming
- INET 3101 - C Programming: Language and Applications (2.0 cr)

### Economics
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- APEC 1102 - Principles of Macroeconomics (3.0 cr)
- APEC 1102H [Inactive] (4.0 cr)
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)

### Public Speaking or Interpersonal Communication
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)
- COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)
- COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)

### Statistics
- EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
- SOC 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

### Structures
If you plan to take elective CSCI courses beyond curriculum requirements, enroll in CSCI 2011.
- INET 3102 - Web Infrastructure (2.0 cr)
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)

### Technical Writing
One technical writing course or writing intensive science course.
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- WRIT 1001 - Introduction to Technical Writing and Communication (3.0 cr)
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

### Core Courses
- INET 3011W - Social Impact of Information Technology [WI] (3.0 cr)
- INET 4001 - Foundations of Operating Systems (4.0 cr)
- INET 4002 - Foundations of Networking (3.0 cr)
- INET 4031 - Introduction to Systems (4.0 cr)
- INET 4051 - IT Infrastructure Operations (3.0 cr)
- INET 4082W - IT Infrastructure Projects and Processes [WI] (3.0 cr)
- INET 4153 - Introduction to Security: Policy and Regulation (4.0 cr)
- INET 4707 - Introduction to Databases (4.0 cr)

### Business/Communication Courses
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)

### Cost Accounting
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other requirements.

Take 0 - 1 course(s) from the following:

- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
- HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
- INET 4007 - Security II: Cyber Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - DevOps I: Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (4.0 cr)
- INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Security I: Principles (3.0 cr)
- INET 4193 - Directed Study (1.0 - 4.0 cr)
- INET 4596 - Internship (1.0 cr)
- Other technical elective with adviser approval

Data Management

Required Data Management Courses

This group consists of the core course INet 4707-Introduction to Databases and two more courses.

INET 4709 - Data Management I: Fundamentals (3.0 cr)
INET 4711 - Data Management II: Distributed Systems (4.0 cr)

Data Management Technical Electives

Take 3 - 5 credit(s) from the following:

- INET 4007 - Security II: Cyber Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - DevOps I: Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (4.0 cr)
- INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Security I: Principles (3.0 cr)
- INET 4193 - Directed Study (1.0 - 4.0 cr)
- INET 4596 - Internship (1.0 cr)
- Other technical elective with adviser approval

Data Science

Required Data Science Courses

This group consists of the core course INet 4707-Introduction to Databases and two more courses.

INET 4061 - Data Science I: Fundamentals (4.0 cr)
INET 4710 - Data Science II: Big Data Analytics (4.0 cr)

Data Science Technical Electives

Take 3 - 5 credit(s) from the following:

- INET 4007 - Security II: Cyber Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - DevOps I: Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Security I: Principles (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4711 - Data Management II: Distributed Systems (4.0 cr)
- INET 4193 - Directed Study (1.0 - 4.0 cr)
- INET 4596 - Internship (1.0 cr)
- Other technical elective with adviser approval
DevOps (Development & Operations)

**Required DevOps Courses**
This group consists of the core course INet 4002-Foundations of Networking and two more courses.

- **INET 4021** - Dev Ops I: Network Programming (4.0 cr)
- **INET 4121** - DevOps II: Development Strategies (4.0 cr)

**Dev Ops Technical Electives**
Take 3 - 5 credit(s) from the following:

- **INET 4007** - Security II: Cyber Security (4.0 cr)
- **INET 4011** - Networking I: Network Administration (4.0 cr)
- **INET 4032** - Systems I: Storage (4.0 cr)
- **INET 4061** - Data Science I: Fundamentals (4.0 cr)
- **INET 4083W** - Systems II: Analysis and Design [WI] (3.0 cr)
- **INET 4165** - Security I: Principles (3.0 cr)
- **INET 4709** - Data Management I: Fundamentals (3.0 cr)
- **INET 4710** - Data Science II: Big Data Analytics (4.0 cr)
- **INET 4711** - Data Management II: Distributed Systems (4.0 cr)
- **INET 4193** - Directed Study (1.0 - 4.0 cr)
  or **INET 4596** - Internship (1.0 cr)

  • Other technical elective with adviser approval

Networking

**Required Networking Courses**
This group consists of the core course INet 4002-Foundations of Networking and two more courses.

- **INET 4011** - Networking I: Network Administration (4.0 cr)
- **INET 4041** - Networking II: Emerging Technologies (4.0 cr)

**Networking Technical Electives**
Take 3 - 5 credit(s) from the following:

- **INET 4007** - Security II: Cyber Security (4.0 cr)
- **INET 4021** - Dev Ops I: Network Programming (4.0 cr)
- **INET 4032** - Systems I: Storage (4.0 cr)
- **INET 4061** - Data Science I: Fundamentals (4.0 cr)
- **INET 4083W** - Systems II: Analysis and Design [WI] (3.0 cr)
- **INET 4121** - DevOps II: Development Strategies (4.0 cr)
- **INET 4165** - Security I: Principles (3.0 cr)
- **INET 4709** - Data Management I: Fundamentals (3.0 cr)
- **INET 4710** - Data Science II: Big Data Analytics (4.0 cr)
- **INET 4711** - Data Management II: Distributed Systems (4.0 cr)
- **INET 4193** - Directed Study (1.0 - 4.0 cr)
  or **INET 4596** - Internship (1.0 cr)

  • Other technical elective with adviser approval

Security

**Required Security Courses**
This group consists of the core course INet 4153-Introduction to Security: Policy and Regulation and two more courses.

- **INET 4007** - Security II: Cyber Security (4.0 cr)
- **INET 4165** - Security I: Principles (3.0 cr)

**Security Technical Electives**
Take 3 - 5 credit(s) from the following:

- **INET 4011** - Networking I: Network Administration (4.0 cr)
- **INET 4021** - Dev Ops I: Network Programming (4.0 cr)
- **INET 4032** - Systems I: Storage (4.0 cr)
- **INET 4061** - Data Science I: Fundamentals (4.0 cr)
- **INET 4083W** - Systems II: Analysis and Design [WI] (3.0 cr)
- **INET 4121** - DevOps II: Development Strategies (4.0 cr)
- **INET 4709** - Data Management I: Fundamentals (3.0 cr)
- **INET 4710** - Data Science II: Big Data Analytics (4.0 cr)
- **INET 4711** - Data Management II: Distributed Systems (4.0 cr)
- **INET 4193** - Directed Study (1.0 - 4.0 cr)
  or **INET 4596** - Internship (1.0 cr)

  • Other technical elective with adviser approval

Systems

**Required Systems Courses**
This group consists of the core course INet 4031-Introduction to Systems and two more courses.

- **INET 4032** - Systems I: Storage (4.0 cr)
INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)

Systems Technical Electives
Take 3 - 5 credit(s) from the following:

- INET 4007 - Security II: Cyber Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - Dev Ops I: Network Programming (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (4.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Security I: Principles (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
- INET 4711 - Data Management II: Distributed Systems (4.0 cr)
- INET 4193 - Directed Study (1.0 - 4.0 cr)
  or INET 4596 - Internship (1.0 cr)
- Other technical elective with adviser approval

Self-Designed

Track Designed in Consultation with Academic Advisor
Take 10 - 12 credit(s) from the following:

- INET 4007 - Security II: Cyber Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - Dev Ops I: Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (4.0 cr)
- INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Security I: Principles (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
- INET 4711 - Data Management II: Distributed Systems (4.0 cr)
- INET 4193 - Directed Study (1.0 - 4.0 cr)
  or INET 4596 - Internship (1.0 cr)
- Other technical elective with adviser approval
Twin Cities Campus
Information Technology Infrastructure Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 14
- Degree: Information Technology Infrastructure Certificate

The information technology (IT) infrastructure certificate will help you develop the knowledge and skills to design, implement, and maintain the IT infrastructure that organizations need to manage daily business practices. Designed and taught by industry professionals, the curriculum emphasizes hands-on learning and application as well as theory, allowing you to apply what you’ve learned right away. You can select from six different track options, including data science, data management, dev ops (development & operations), networking, security and systems, or design your own curriculum with guidance and support from program staff.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
1. Prerequisites: The ITI faculty director will complete a holistic review of your academic and professional career to make a final determination on all needed prerequisite coursework. Based on this review, you might need to complete one or more of the following courses:

   MATH 1271 Calculus I (4 cr) or MATH 1042 Mathematics of Design (4 cr)
   CSCI 1103 Intro to Computer Programming in Java (4 cr)
   CSCI 1133 Introduction to Computing and Programming Concepts (4 cr)
   CSCI 1933 Introduction to Algorithms and Data Structures (4 cr)
   CSCI 2021 Machine Architecture and Organization (4 cr)
   INET 4001 Intro to Operating Systems (4 cr)
   INET 4002 Foundations of Networking (3 cr)
   INET 3101 C Programming: Language and Applications (2 cr)

2. Complete the certificate within four years of the admission date.

3. You may apply up to 6 credits of transferable, department-approved coursework from other educational institutions toward the certificate.

Program Sub-plans
Students are required to complete one of the following sub-plans.

**Data Management**
This track features hands-on experience with data, starting in relational databases, migrating to NoSQL (big data) concepts, and culminating with building infrastructure to support data management for high availability and large distributed systems.

**Required Courses**
- INET 4051 - IT Infrastructure Operations (3.0 cr)
- INET 4707 - Introduction to Databases (4.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4711 - Data Management II: Distributed Systems (4.0 cr)

**Data Science**
Data science explains how to use massive amounts of data to ask questions, find patterns and anomalies, and further the research and development of industries outside of IT, such as health care and biological sciences. The data science track begins with the same introductory course as the data management track to establish foundational knowledge of how data are stored and queried. The next two courses cover business intelligence, analytics, big data, and various algorithms, tools, and methodologies to engage students in very large conceptual areas.

**Required Courses**
- INET 4051 - IT Infrastructure Operations (3.0 cr)
- INET 4061 - Data Science I: Fundamentals (4.0 cr)
- INET 4707 - Introduction to Databases (4.0 cr)
- INET 4710 - Data Science II: Big Data Analytics (4.0 cr)

**DevOps (Development & Operations)**
The development and operations subplan covers the development of applications, as well as the role of code in the building, managing, and monitoring of infrastructure and operating systems and the packages required to run those applications. Students will work to understand languages such as Java and Python, as well as how to use orchestration tools like Chef and Puppet to create an environment to build and deploy applications faster than traditional methods.

**Required Courses**
- INET 4002 - Foundations of Networking (3.0 cr)
- INET 4021 - DevOps I: Network Programming (4.0 cr)
- INET 4051 - IT Infrastructure Operations (3.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)

**Networking**
The networking track develops foundational knowledge of how networks work--everything from theory to physical devices. The introductory course ensures students understand layers 1 to 7 as they are used every day. The next course delves into network sockets, the software mechanisms used to transfer data, and the final course in the track is an exploration of emerging technologies, providing a unique perspective on networking today.

**Required Courses**
- INET 4002 - Foundations of Networking (3.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- INET 4051 - IT Infrastructure Operations (3.0 cr)

**Security**
The security track provides foundational knowledge in not just "keeping people out," but also the how and why of security breaches. This specialty examines the tools and mechanisms to track who did what, and covers the exponentially growing challenges of cloud security. The introductory course attempts to unravel the motives of information thieves, while subsequent courses cover how to be sure we are doing everything we can to keep our data secure in and out of the cloud.

**Required Courses**
- INET 4007 - Security II: Cyber Security (4.0 cr)
- INET 4051 - IT Infrastructure Operations (3.0 cr)
- INET 4153 - Introduction to Security: Policy and Regulation (4.0 cr)
- INET 4165 - Security I: Principles (3.0 cr)

**Systems**
This specialty includes coursework in system administration, storage design, and system analysis and design. Stepping from the
fundamentals of bare metal computing to cloud, virtualization, and software defined networking requires a unique focus within course work

**Required Courses**
- INET 4031 - Introduction to Systems (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4051 - IT Infrastructure Operations (3.0 cr)
- INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)

**Self-Designed**
Students may design their own 14-credit area of emphasis based upon individual academic background and professional experience and goals. CCAPS department/advisor approval is required.

**Electives for Self-Designed Certificate**
- INET 4002 - Foundations of Networking (3.0 cr)
- or INET 4007 - Security II: Cyber Security (4.0 cr)
- or INET 4011 - Networking I: Network Administration (4.0 cr)
- or INET 4021 - DevOps I: Network Programming (4.0 cr)
- or INET 4031 - Introduction to Systems (4.0 cr)
- or INET 4032 - Systems I: Storage (4.0 cr)
- or INET 4051 - IT Infrastructure Operations (3.0 cr)
- or INET 4061 - Data Science I: Fundamentals (4.0 cr)
- or INET 4082W - IT Infrastructure Projects and Processes [WI] (3.0 cr)
- or INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)
- or INET 4121 - DevOps II: Development Strategies (4.0 cr)
- or INET 4153 - Introduction to Security: Policy and Regulation (4.0 cr)
- or INET 4165 - Security I: Principles (3.0 cr)
- or INET 4193 - Directed Study (1.0 - 4.0 cr)
- or INET 4707 - Introduction to Databases (4.0 cr)
- or INET 4709 - Data Management I: Fundamentals (3.0 cr)
- or INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
- or INET 4711 - Data Management II: Distributed Systems (4.0 cr)

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Information current as of September 02, 2020
Twin Cities Campus
Information Technology Infrastructure Minor
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 22 to 23

The information technology (IT) infrastructure minor equips students with the industry insight and business skills they need to succeed in the IT management field. Students can select from six different track options, including data science, data management, devops (development and operations), networking, security, and systems, or design their own curriculum with guidance and support from program staff. This minor is available to students who are currently enrolled in an undergraduate degree program at the University of Minnesota.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite Course
CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)

Minor Requirements
With approval of the program, up to 6 credits of transfer coursework may be used to satisfy requirements for this minor.

Program Sub-plans
Students are required to complete one of the following sub-plans.

Data Management
This track features hands-on experience with data, starting in relational databases, migrating to NoSQL (big data) concepts, and culminating with building infrastructure to support data management for high availability and large distributed systems.

Required Courses
INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)
INET 4707 - Introduction to Databases (4.0 cr)
INET 4709 - Data Management I: Fundamentals (3.0 cr)
INET 4711 - Data Management II: Distributed Systems (4.0 cr)

Data Science
Data science explains how to use massive amounts of data to ask questions, find patterns and anomalies, and further the research and development of industries outside of IT, such as health care and biological sciences. The data science track begins with the same introductory course as the data management track to establish foundational knowledge of how data are stored and queried. The next two courses cover business intelligence, analytics, big data, and various algorithms, tools, and methodologies to engage students in very large conceptual areas.
Required Courses

INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)
INET 4707 - Introduction to Databases (4.0 cr)
INET 4153 - Introduction to Security: Policy and Regulation (4.0 cr)
INET 4165 - Security I: Principles (3.0 cr)
INET 4007 - Security II: Cyber Security (4.0 cr)

DevOps (Development & Operations)

The development and operations subplan covers the development of applications, as well as the role of code in the building, managing, and monitoring of infrastructure and operating systems and the packages required to run those applications. Students will work to understand languages such as Java and Python, as well as how to use orchestration tools like Chef and Puppet to create an environment to build and deploy applications faster than traditional methods.

Required Courses

INET 3101 - C Programming: Language and Applications (2.0 cr)
INET 3102 - Web Infrastructure (2.0 cr)
INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)
INET 4021 - Dev Ops I: Network Programming (4.0 cr)
INET 4121 - DevOps II: Development Strategies (4.0 cr)

Networking

The networking track develops foundational knowledge of how networks work—everything from theory to physical devices. The introductory course ensures students understand layers 1 to 7 as they are used every day. The next course delves into network sockets; the software mechanisms used to transfer data, and the final course in the track is an exploration of emerging technologies, providing a unique perspective on networking today.

Required Courses

INET 3101 - C Programming: Language and Applications (2.0 cr)
INET 3102 - Web Infrastructure (2.0 cr)
INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)
INET 4011 - Networking I: Network Administration (4.0 cr)
INET 4041 - Networking II: Emerging Technologies (4.0 cr)

Security

The security track provides foundational knowledge in not just "keeping people out," but also the how and why of security breaches. This specialty examines the tools and mechanisms to track who did what, and covers the exponentially growing challenges of cloud security. The introductory course attempts to unravel the motives of information thieves, while subsequent courses cover how to be sure we are doing everything we can to keep our data secure in and out of the cloud.

Required Courses

INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)
INET 4153 - Introduction to Security: Policy and Regulation (4.0 cr)
INET 4165 - Security I: Principles (3.0 cr)
INET 4007 - Security II: Cyber Security (4.0 cr)

Systems

This specialty includes coursework in system administration, storage design, and system analysis and design. Stepping from the fundamentals of bare metal computing to cloud, virtualization, and software defined networking requires a unique focus within course work.

Required Courses

INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)
INET 4031 - Introduction to Systems (4.0 cr)
INET 4032 - Systems I: Storage (4.0 cr)
INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)

Self-Designed

The self-designed minor is based on individual academic background and professional goals.

Required Courses
INET 4001 - Foundations of Operating Systems (4.0 cr)
INET 4002 - Foundations of Networking (3.0 cr)

Electives for ITI Self-Designed Minor

With CCAPS department/adviser approval, take 11-12 credits from among the following INET courses.

- INET 4007 - Security II: Cyber Security (4.0 cr)
- or INET 4011 - Networking I: Network Administration (4.0 cr)
- or INET 4021 - Dev Ops I: Network Programming (4.0 cr)
- or INET 4031 - Introduction to Systems (4.0 cr)
- or INET 4032 - Systems I: Storage (4.0 cr)
- or INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- or INET 4061 - Data Science I: Fundamentals (4.0 cr)
- or INET 4082W - IT Infrastructure Projects and Processes [WI] (3.0 cr)
- or INET 4083W - Systems II: Analysis and Design [WI] (3.0 cr)
- or INET 4121 - DevOps II: Development Strategies (4.0 cr)
- or INET 4153 - Introduction to Security: Policy and Regulation (4.0 cr)
- or INET 4165 - Security I: Principles (3.0 cr)
- or INET 4193 - Directed Study (1.0 - 4.0 cr)
- or INET 4596 - Internship (1.0 cr)
- or INET 4707 - Introduction to Databases (4.0 cr)
- or INET 4709 - Data Management I: Fundamentals (3.0 cr)
- or INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
- or INET 4711 - Data Management II: Distributed Systems (4.0 cr)
**Twin Cities Campus**  
**Inter-College Program B.A.**  
**CCAPS Individualized Degree and Inter-College Prog**  
**College of Continuing and Professional Studies**

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2020  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 59  
- Degree: Bachelor of Arts

Founded in 1930, the Inter-College Program (ICP) embodies the University of Minnesota's commitment to individualized undergraduate education by providing cross-college, course/credit-based degree options. Drawing upon the curricular offerings of most of the University's colleges and departments, students design either a bachelor of arts (BA) or a bachelor of science (BS) degree incorporating a significant amount of coursework from at least two different colleges within the University system.

Bachelor of arts degrees include significant coursework in the liberal arts, such as that found in arts and humanities and the social sciences. BA degrees also require completion of second language studies. Most students design a degree drawing from two or three departmental areas from the University. Examples include sustainability studies, communication studies, and HECUA; or Carlson School of Management, manufacturing operations management, and applied economics.

ICP is most appropriate for self-directed students whose educational backgrounds and career and intellectual interests require both a clear personal focus and a flexible interdisciplinary approach. Interested students should attend one of the weekly information sessions, in which academic advisors provide a detailed introduction to the program and help students begin the planning process. For further information on the Inter-College Program, visit https://ccaps.umn.edu/inter-college-program-bachelors-degree

**Program Delivery**  
This program is available:  
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**  
Students must complete 30 credits before admission to the program.

Students are considered for admission based on a review of their application. The review includes factors such as GPA, grade trends, performance in coursework relevant to proposed areas of study, and demonstrated ability to meet curricular and developmental expectations of individualized undergraduate education. Students must have attended a program information session and an initial degree planning appointment with an advisor.

Preferred benchmarks are a 2.50 GPA and 50 semester credits completed.

Students must develop a degree plan that includes:  
* Academic and career goals.  
* Courses proposed for the program, from at least two colleges.  
* Approval of the plan from at least two faculty or departmental advisers.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://admissions.umn.edu).

**General Requirements**  
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](https://ccaps.umn.edu/inter-college-program-bachelors-degree). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**  
Students are required to take 2 semester(s) of any second language.

Students must earn 50 upper division credits in the degree. In applicable departmental areas, successful completion of the following courses will count toward the 50 credits: CHEM 2302, CSCI 2021, DHA 2463, FW 2001, PSY 2801.
At least half of the upper division credits required for the major must be taken at University of Minnesota-Twin Cities. (25crs)

**Inter-College Program Proposal Development Requirement**

ICP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)

**Inter-College Program Language and Culture Requirement**

Students are required to complete a second language requirement. Option 1: successfully complete the fourth semester of a single second language. Option 2: successfully complete the second semester of a single second language, plus 8 credits of additional language or culture study.

**Inter-College Program Career Readiness Requirement**

ABUS 3051 - Career Search for the Professional Environment (2.0 cr)

or AHS 2400 - Writing a Personal Statement (1.0 cr)

or ICP 3201 - Career and Internship Preparation (1.0 cr)

or CFAN 3201 - Career and Internship Preparation (1.0 cr)

or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)

or CLA 3201 - Career Planning: Preparing for Your Post-Graduation Plans (2.0 cr)

**Upper-division Writing Intensive Requirement**

Students are required to take one upper division writing intensive course within the major. Students work with their advisor to select the appropriate course.

Take 0 - 1 course(s) from the following:

- ICP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)

**ICP Program Options**

**Two Area Cross-College Program**

This plan combines courses from two area cross-college programs, such as CSOM and mass communications, or computer science, and French.

Complete 20 approved credits of upper division coursework in one area of concentration.

Complete 20 approved credits of upper division coursework in a second area of concentration.

Complete 10 credits of elective upper division coursework.

-OR-

**Three Area Cross-College Program**

This plan combines courses from three area cross-college programs, such as applied business, communication studies, and psychology, or public health, child psychology, and family social science.

Complete 20 approved credits of upper division coursework in one area of concentration.

Complete 12 approved credits of upper division coursework in a second area of concentration.

Complete 12 approved credits of upper division coursework in a third area of concentration.

Complete 6 credits of elective upper division coursework.

-OR-

**Thematic Cross-College Program**

A thematic cross-college program, such as aging studies, integrates coursework from several departments--sociology, public health, family social science, and social work. Thematic programs are appropriate only when students' objectives are clearly focused on one topic that cannot be pursued in a two- or three-area program.

Complete 40 approved upper division credits on a theme with no more than 15 credits in any one department.

Complete 10 credits of elective upper division coursework.
**Twin Cities Campus**

**Inter-College Program B.S.**

**CCAPS Individualized Degree and Inter-College Program**

**College of Continuing and Professional Studies**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 54 to 67
- Degree: Bachelor of Science

Founded in 1930, the Inter-College Program (ICP) embodies the University of Minnesota's commitment to individualized undergraduate education by providing cross-college, course/credit-based degree options. Drawing upon the curricular offerings of most of the University's colleges and departments, students design either a bachelor of arts (BA) or a bachelor of science (BS) degree incorporating a significant amount of coursework from at least two different colleges within the University system.

Bachelor of science degrees are those that pertain to the physical or biological sciences, have significant quantitative or investigative tools/methods expectations, or have a pronounced applied/professional component (e.g., public health, education, business, social work). Most students design a degree drawing from two or three departmental areas from the University. Examples include sustainability studies, communication studies, and HECUA; or Carlson School of Management, manufacturing operations management, and applied economics.

ICP is most appropriate for self-directed students whose educational backgrounds and career and intellectual interests require both a clear personal focus and a flexible interdisciplinary approach. Interested students should attend one of the weekly information sessions, in which academic advisers provide a detailed introduction to the program and help students begin the planning process. For more information on the Inter-College Program, visit [https://ccaps.umn.edu/inter-college-program-bachelors-degree](https://ccaps.umn.edu/inter-college-program-bachelors-degree)

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

Students must complete 30 credits before admission to the program.

Students are considered for admission based on a review of their application. The review includes factors such as GPA, grade trends, performance in coursework relevant to proposed areas of study, and demonstrated ability to meet curricular and developmental expectations of individualized undergraduate education. Students must have attended a program information session and an initial degree planning appointment with an advisor.

Preferred benchmarks are 2.50 GPA and 50 semester credits completed.

Students must develop a degree plan that includes
- Academic and career goals.
- Courses proposed for the program, from at least two colleges.
- Approval of the plan from at least two faculty or departmental advisers.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://admissions.umn.edu).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](https://ccaps.umn.edu/liberal-education-requirements). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students must earn 50 upper division credits in the degree. At least half of the upper division credits required for the major must be taken at University of Minnesota-Twin Cities. (25 crs) In applicable departmental areas, successful completion of the following courses will count toward the 50 credits: CHEM 2302, CSCI 2021, DHA 2463, FW 2001, PSY 2801.
ICP Proposal Development Requirement
ICP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)

Upper Division Writing Intensive Requirement
Students are required to take one upper division writing intensive course within the major. Students work with their advisor to select the appropriate course.
Take 0 - 1 course(s) from the following:
• ICP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)

Inter-College Program Career Readiness Requirement
ABUS 3051 - Career Search for the Professional Environment (2.0 cr)
or AHS 2400 - Writing a Personal Statement (1.0 cr)
or ICP 3201 - Career and Internship Preparation (1.0 cr)
or CFAN 3201 - Career and Internship Preparation (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
or CLA 3201 - Career Planning: Preparing for Your Post-Graduation Plans (2.0 cr)
or CLA 3896 - Internship Reflection: Making Meaning of Your Experience (1.0 cr)

ICP Program Options

Two Area Cross-College Program
This plan combines courses from two area cross-college programs, such as Carlson School of Management and mass communications, or computer science and French.
Complete 21 approved credits of upper division coursework in one area of concentration.
Complete 21 approved credits of upper division coursework in a second area of concentration.
Complete 8 supporting upper division credits in approved coursework.

-OR-

Three Area Cross-College Program
This plan combines courses from three area cross-college programs, such as applied business, communication studies, and psychology, or public health, child psychology, and family social science.
Complete 20 approved credits of upper division coursework in one area of concentration.
Complete 15 approved credits of upper division coursework in a second area of concentration.
Complete 15 approved credits of upper division coursework in a third area of concentration.

-OR-

Thematic Cross-College Program
The thematic cross-college program, such as aging studies, integrates coursework from several departments--sociology, public health, family social science, and social work. Thematic programs are appropriate only when students’ objectives are clearly focused on one topic that cannot be pursued in a two- or three-area program.
Complete 50 approved upper division credits with no more than 15 credits in any one department.

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Interpreting Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 18 to 25
- Degree: Interpreting Certificate Ugrd

The certificate in interpreting is designed for both current language professionals and those new to the field. The interpreting certificate provides a valued university credential from a world-class university. Develop knowledge and skills in: interpreter protocols, ethical issues, specialized terminologies, consecutive interpreting, sight translation, and simultaneous interpreting.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Student must complete the following before admission:
- Complete the Language Background Form
- Complete bilingual writing samples using the Writing Sample Form

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must select a sub-plan with a specialty in health care interpreting or legal interpreting, or the option of a sub-plan combining both specialties. Students must complete the certificate within four years of the admission date. With approval of the program, up to 7 credits of transfer coursework may be used to satisfy requirements for this certificate.

Program Sub-plans
Students are required to complete one of the following sub-plans.

Health Care
Subplan Requirements
- Required Core Courses
  - TRIN 3001 - Introduction to Translation (3.0 cr)
  - TRIN 3101 - Introduction to Interpreting (3.0 cr)
  - TRIN 3102 - Consecutive Interpreting (3.0 cr)

  Health Care Interpreting Courses
  - TRIN 1201 - Health Care Terms and Concepts for Interpreters (3.0 cr)
  - TRIN 4201 - Interpreting in Health Care Settings (3.0 cr)

  Elective Course
  With advisor approval substituting another relevant course is sometimes possible.
  Take exactly 1 course(s) from the following:
  - LING 1701 - Language and Society [DSJ] (4.0 cr)
  - LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
  - LING 5001 - Introduction to Linguistics (4.0 cr)
  - COMM 3411 - Introduction to Small Group Communication (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
• TRIN 3002 - Intermediate Translation (3.0 cr)
• TRIN 3900 - Topics in Translation and Interpreting (3.0 cr)

Legal

Subplan Requirements

Required Core Courses
- TRIN 3001 - Introduction to Translation (3.0 cr)
- TRIN 3101 - Introduction to Interpreting (3.0 cr)
- TRIN 3102 - Consecutive Interpreting (3.0 cr)

Legal Interpreting Courses
- TRIN 1301 - Legal Terms and Concepts for Interpreters (3.0 cr)
- TRIN 4301 - Interpreting in Legal Settings (3.0 cr)

Elective Course

With advisor approval substituting another relevant course is sometimes possible.
Take exactly 1 course(s) from the following:
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- LING 1701 - Language and Society [DSJ] (4.0 cr)
- LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
- LING 5001 - Introduction to Linguistics (4.0 cr)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
- TRIN 3002 - Intermediate Translation (3.0 cr)
- TRIN 3900 - Topics in Translation and Interpreting (3.0 cr)

Combined Subplan

Required Core Courses
- TRIN 3001 - Introduction to Translation (3.0 cr)
- TRIN 3101 - Introduction to Interpreting (3.0 cr)
- TRIN 3102 - Consecutive Interpreting (3.0 cr)

Interpreting Courses
- TRIN 1201 - Health Care Terms and Concepts for Interpreters (3.0 cr)
- TRIN 4201 - Interpreting in Health Care Settings (3.0 cr)
- TRIN 1301 - Legal Terms and Concepts for Interpreters (3.0 cr)
- TRIN 4301 - Interpreting in Legal Settings (3.0 cr)

Elective Course

With advisor approval substituting another relevant course is sometimes possible.
Take exactly 1 course(s) from the following:
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- LING 1701 - Language and Society [DSJ] (4.0 cr)
- LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
- LING 5001 - Introduction to Linguistics (4.0 cr)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
- TRIN 3002 - Intermediate Translation (3.0 cr)
- TRIN 3900 - Topics in Translation and Interpreting (3.0 cr)
Twin Cities Campus

Joint Military Science Leadership Minor
CCAPS Degree and Credit Programs Administration
College of Continuing and Professional Studies

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 20

This minor provides students with basic concepts and principles of military science and the art of leadership. Areas of study include citizenship, military history, values, ethics, integrity, honor, responsibility, management, and leadership skills. Students gain practical leadership experience, develop self-discipline, and gain confidence—all of which are valuable qualities when applied to service in a military or civilian career. In consultation with the ROTC programs, this minor is now distinct from participation in ROTC, is open to all qualified students, and does not require physical training.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Significant practical leadership experience.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Students choose one of four program tracks: Aerospace Science, Military Science, Naval Science-Navy, or Naval Science-Marines.

Program Sub-plans
Students are required to complete one of the following sub-plans.

Aerospace Science

Aerospace Science Option
The history requirement can be satisfied by the completion of AIR 1204 and AIR 1205 or by the completion of Air Force ROTC Field Training.
AIR 1204 - The Evolution of USAF Air and Space Power I (1.0 cr)
AIR 1205 - The Evolution of USAF Air and Space Power II (1.0 cr)
AIR 3301 - Air Force Leadership, Quality, and Communication (3.0 cr)
AIR 3302 - Air Force Officership, Quality, and Communication (3.0 cr)
AIR 3401 - National Security Policy (3.0 cr)
AIR 3402 - Preparation for Active Duty (3.0 cr)
Complete a 3-credit philosophy, rhetoric, or leadership course approved by the Professor of Aerospace/Chair of the Department of Aerospace Science.

Military Science

Military Science Option
MIL 3301 - Training Management and Warfighting Functions (3.0 cr)
MIL 3302 - Applied Leadership in Small Unit Operations (3.0 cr)
MIL 3401 - The Army Officer (3.0 cr)
MIL 3402 - Company Grade Leadership (3.0 cr)
MIL 3970 - Military History (3.0 cr)
Complete a 3-credit philosophy, rhetoric, or leadership course approved by the Professor of Military Science/Chair of the Department of Military Science.

Naval Science-Marines

Naval Science-Marines Option
NAV 1102 - Seapower and Maritime Affairs (3.0 cr)
NAV 3310 - Evolution of Warfare (3.0 cr)
NAV 4401W - Leadership and Management I [WI] (3.0 cr)
NAV 4402W - Leadership and Ethics [CIV, WI] (3.0 cr)
NAV 3309 - Fundamentals of Maneuver Warfare (3.0 cr)
Complete a 3-credit philosophy, rhetoric, or leadership course approved by the Professor of Military/Chair of the Department of Naval Science.

Naval Science--Navy

Naval Science Option
NAV 1102 - Seapower and Maritime Affairs (3.0 cr)
NAV 2201 - Ship Systems I: Naval Engineering (3.0 cr)
NAV 3301 - Navigation I: Piloting and Celestial Navigation (3.0 cr)
NAV 4401W - Leadership and Management I [WI] (3.0 cr)
NAV 4402W - Leadership and Ethics [CIV, WI] (3.0 cr)
Complete a 3-credit philosophy, rhetoric, or leadership course approved by the Professor of Military Science/Chair of the Department of Naval Science.
**Twin Cities Campus**

**Multidisciplinary Studies B.A.**
**CCAPS Individualized Degrees**
**College of Continuing and Professional Studies**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 50
- Degree: Bachelor of Arts

Founded in 2006 in response to the growing demand for high quality pathways to degree completion, multidisciplinary studies (MdS) embodies the University of Minnesota’s commitment to individualized undergraduate education by providing returning adult learners with access to cross-college, individualized degree options. Drawing upon the curricular offerings of most of the University’s colleges and departments, students design a bachelor of arts (BA) or bachelor of science (BS) degree incorporating coursework from three of five multidisciplinary areas. Multidisciplinary studies degree areas include applied, technical, and professional; arts and humanities; communications; history and social science; and science and health science. MdS students begin their journey to degree completion in a credit-based degree planning seminar in which they discern a degree plan which reflects their professional and personal goals. MdS is intended to serve returning adult learners with a minimum of a two-year gap in their pursuit of higher education and who value the challenge and rewards of individualized education. Interested students are encouraged to attend an information session held multiple times per month. Academic advisers provide a detailed introduction to the program and help students begin the planning process. A growing number of courses are available online and students may have the option of completing the MdS degree completely online.

For further information on multidisciplinary studies, visit https://ccaps.umn.edu/multidisciplinary-studies-bachelors-degree

**Program Delivery**
This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**
Students must complete 50 credits before admission to the program.

Transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Students with 30-49 transferable credits, GPA of 2.5, and strong interest in the major may be admitted to pre-major status.

Admission is based on GPA, grade trends, performance in relevant coursework, and demonstrated ability to meet expectations of individualized undergraduate education.

Students must have attended an information session and an advising appointment.

Preferred program match factors include
- A 2-year break in pursuit of a degree (need not be continuous)
- A heavy, though not necessarily exclusive, reliance on evening and online/distance learning (ODL) coursework

At a timely point after admission, students must enroll in MDS 3001W: Intro to Multidisciplinary Studies, a 3-credit course, to develop a written proposal with a rationale for the degree plan. When the instructor has determined that the proposal is complete, it is submitted to a review committee for approval. At that point, the student achieves major status.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**General Requirements**
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in
which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**
At least half of the upper division credits required for the major must be taken at University of Minnesota Twin Cities. (25crs)

**Multidisciplinary Studies Language and Culture Requirement**
Students are required to complete 12 semester credits of coursework dedicated to languages and/or cultures other than the student's native language or culture. Speak with a program adviser for more information.

**Multidisciplinary Studies Oral Communication Requirement**
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
- or COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- or COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
- or MGMT 3033W - Business Communication [WI] (3.0 cr)
- or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- or Equivalent

**Upper Division Writing Intensive Requirement**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- MDS 3001W - Introduction to Multidisciplinary Studies [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)

**Multidisciplinary Studies Requirements**
Note: Students must complete a minimum of 50 upper division credits for this degree program. Courses taken for above requirements may sometimes count toward this 50-credit minimum.
- MDS 3001W - Introduction to Multidisciplinary Studies [WI] (3.0 cr)

Must have min of 50 upper div cr for major & include min of 15 upper div cr in each area. Students choose coursework from at least two of following areas: arts & humanities; communication; or hist & soc sci; and may choose coursework from third area: applied, tech, & prof; or science & health sci
Multidisciplinary Studies B.S.
CCAPS Individualized Degrees
College of Continuing and Professional Studies

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 50
- Degree: Bachelor of Science

Founded in 2006 in response to the growing demand for high quality pathways to degree completion, multidisciplinary studies (MdS) embodies the University of Minnesota's commitment to individualized undergraduate education by providing returning adult learners with access to cross-college, individualized degree options. Drawing upon the curricular offerings of most of the University's colleges and departments, students design a bachelor of arts (BA) or bachelor of science (BS) degree incorporating coursework from three of five multidisciplinary areas. Multidisciplinary studies degree areas include applied, technical, and professional; arts and humanities; communications; history and social science; and science and health science. MdS students begin their journey to degree completion in a credit-based degree planning seminar in which they discern a degree plan which reflects their professional and personal goals. MdS is intended to serve returning adult learners with a minimum of a two-year gap in their pursuit of higher education and who value the challenge and rewards of individualized education. Interested students are encouraged to attend an information session held multiple times per month. Academic advisors provide a detailed introduction to the program and help students begin the planning process. A growing number of courses are available online and students may have the option of completing the MdS degree completely online.

For further information on Multidisciplinary Studies, visit https://ccaps.umn.edu/multidisciplinary-studies-bachelors-degree.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 50 credits before admission to the program.

Transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Students with 30-49 transferable credits, a GPA of 2.5, and strong interest in the major may be admitted to premajor status.

Admission is based on GPA, grade trends, performance in relevant coursework, and demonstrated ability to meet expectations of individualized undergraduate education.

Students must have attended an information session and an advising appointment.

Preferred program match factors include
- A 2-year break in pursuit of a degree (need not be continuous)
- A heavy, though not necessarily exclusive, reliance on evening and online/distance learning (ODL) course work

At a timely point after admission, students must enroll in MDS 3001W: Intro to Multidisciplinary Studies, a 3-credit course, to develop a written proposal with a rationale for the degree plan. When the instructor has determined that the proposal is complete, it is submitted to a review committee for approval. At that point, the student achieves major status.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in
which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
In applicable departmental areas, successful completion of the following courses will count toward the 50 credits: CHEM 2302, CSCI 2021, DHA 2463, FW 2001, PSY 2801.

All major courses must be completed with a letter grade of C- or better. At least half of the upper division credits required for the major must be taken at University of Minnesota-Twin Cities. (25crs)

At least half of the upper division credits required for the major must be taken at University of Minnesota-Twin Cities. (25crs)

Multidisciplinary Studies Oral Communication Requirement
ABUS 4023W - Communicating for Results [WI] (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
or COMM 3411 - Introduction to Small Group Communication (3.0 cr)
or COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
or MGMT 3033W - Business Communication [WI] (3.0 cr)
or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
or Equivalent

Multidisciplinary Studies Quantitative or Critical Thinking Requirement
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or EPSY 5261 - Introductory Statistical Methods (3.0 cr)
or NURS 3710 - Statistics for Clinical Practice and Research [MATH] (3.0 cr)
or POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Upper Division Writing Intensive Requirement
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list.

Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MDS 3001W - Introduction to Multidisciplinary Studies [WI] (3.0 cr)
• ABUS 4023W - Communicating for Results [WI] (3.0 cr)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)

Multidisciplinary Studies Requirements
Note: Students must complete a minimum of 50 upper-division credits for this degree program. Courses taken for above requirements may sometimes count toward this 50-credit minimum.
MDS 3001W - Introduction to Multidisciplinary Studies [WI] (3.0 cr)
Must have min of 50 upper div cr for major & include min of 15 upper div cr in each area. Students choose coursework from one of the following areas: applied, tech & Prof; or science & health sci; and may choose coursework from remaining areas: arts & humanities; communication; or hist & soc sci.
Twin Cities Campus
Nanotechnology Practice Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 16
• Degree: Nanotechnology Practice Certificate

The 16-credit nanotechnology practice certificate is awarded for successful completion of six courses that comprise the nanotechnology capstone program for students from Dakota County Technical College. The courses are offered by the College of Continuing and Professional Studies in cooperation with the U of M College of Science and Engineering. This certificate is specifically intended to provide a professional credential for the DCTC students (and possibly nanotechnology students from other partner institutions in the future).

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

Admission to this certificate is limited to students currently enrolled in the nanotechnology program offered through the Dakota County Technical College (DCTC).

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
With approval of the program, up to 6 credits of transfer coursework may be used to satisfy requirements for this certificate.

Certificate Requirements
MT 3111 - Elements of Microelectronic Manufacturing (3.0 cr)
MT 3112 - Elements of Micro and Nano Manufacturing Laboratory (1.0 cr)
MT 3121 - Thin Films Deposition (3.0 cr)
MT 3131 - Introduction to Materials Characterization (4.0 cr)
MT 3141 - Principles and Applications of Bionanotechnology (4.0 cr)
MT 3142 - Nanoparticle Technology and Engineering Laboratory (1.0 cr)
Twin Cities Campus
Ojibwe Language Teaching Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 18
• Degree: Ojibwe Language Teaching Certificate

The Ojibwe language teaching certificate was designed to address the critical point of Ojibwe language loss in Minnesota by developing a cadre of Ojibwe language learners, speakers, and teachers. This effort is part of a global indigenous language revitalization movement based on the understanding that language is fundamental to cultural survival and tribal sovereignty.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must complete the certificate within four years of the admission date. With approval of the program, up to 7 credits of transfer coursework may be used to satisfy the requirements for this certificate.

Certificate Requirements
Core Requirements
- OJIB 5106 - Advanced Ojibwe Language I (3.0 cr)
- OJIB 5109 - Advanced Ojibwe Language II (3.0 cr)
- AMIN 3107 (Inactive) (3.0 cr)
- OJIB 3127 (Inactive) (3.0 cr)

Field Study
3 credits of Field Study required
- AMIN 4996 - Field Study (1.0 - 12.0 cr)

Elective Courses
Choose one elective course.
- AMIN 3141 - American Indian Language Planning (3.0 cr)
Twin Cities Campus
Translation Minor
CCAPS Applied Professional Studies
College of Continuing and Professional Studies

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The minor in translation allows students to develop and enhance skills for translating between English and a second language. Students earning the minor explore the rewarding and varied field of professional translation, acquire technical skills using translation memory tools, develop specific areas of expertise and interest, and improve their written command of English and another language through practical translation tasks, readings, and discussions on the history, theory, and practice of translation.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students are required to take 4 semester(s) of any second language.

Language background information and writing samples must be submitted

Minor Requirements
Core Requirement
  - TRIN 3001 - Introduction to Translation (3.0 cr)
  - TRIN 3002 - Intermediate Translation (3.0 cr)
  - TRIN 3005 - Principles of Translation (3.0 cr)
  - TRIN 3101 - Introduction to Interpreting (3.0 cr)

Elective
  - Choose 3 credits from a department outside of TRIN. Course(s) should be selected in consultation with the translation minor adviser.
Twin Cities Campus
Adult Education Undergraduate Certificate
Organizational Leadership, Policy and Development
College of Education and Human Development

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 14
- Degree: Adult Education Certificate Ugrd

Adult Education Undergraduate Certificate

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Degree and non-degree seeking students from both within and outside the department are eligible to get the certificate.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Required Courses
- OLPD 3202 - Introduction to Strategies for Teaching Adults (3.0 cr)
- OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
- OLPD 5202 - Perspectives of Adult Learning and Development (3.0 cr)

Applied Experience in Adult Education
Choose from one of the following two course options. If OLPD 4696, 4 credits must be completed.
- OLPD 5296 - Field Experience in Adult Education (1.0 - 6.0 cr)
- or OLPD 4696 - Applied Experience in Business Marketing Education & Human Resource Development (1.0 - 4.0 cr)

Electives
If a student needs to take more credits in order to reach the 14 credit minimum for this Certificate, those remaining credits can be selected from the courses listed below.
- OLPD 3308 - Data-Driven Decision-Making in BME and HRD (3.0 cr)
- or OLPD 3641 - Introduction to Organization Development (3.0 cr)
- or OLPD 5211 - Introduction to the Undereducated Adult (1.0 cr)
- or OLPD 5212 - Introduction to Adult Literacy in the Workplace (1.0 cr)
- or OLPD 5213 - Introduction to Adult Literacy in the Community (1.0 cr)

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Information current as of September 02, 2020
**Twin Cities Campus**

**Applied Psychology in Educational and Community Settings Minor**

**Education Psychology**

**College of Education and Human Development**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The applied psychology in educational and community settings (APECS) minor is a 15-credit program in the application of psychological theory (systems-ecological, developmental, behavioral, cognitive-behavioral) and scientific findings in educational settings to enhance the academic, social, and emotional competence of youth and adults. Emphasis areas include child/adolescent/adult learning and interpersonal, social, cultural, institutional, and economic contexts that shape cognition, motivation, and performance. Students gain direct experience by enrolling in an integrated practicum that combines research and practice in applied psychology. The APECS minor is designed to meet the needs of learners from diverse backgrounds and provide the tools necessary to keep pace with the increasing diversity found in schools and communities.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Minor Requirements**

**APECS Required Courses (12 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPSY 3301</td>
<td>Introduction to Educational Psychology [SOCS]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EPSY 3132</td>
<td>Psychology of Multiculturalism in Education [DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EPSY 3303</td>
<td>Educational Psychology Undergraduate Practicum</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or EPSY 3303H</td>
<td>Honors Educational Psychology Undergraduate Practicum</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>

**Required Statistics Core Course**

It is expected that students take EPSY 3264 to fulfill the statistics requirement of the APECS minor. A substitution will be considered if students have already completed one of the following courses prior to declaring the minor: PSY 3801, SOC 3811, or STAT 3011.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPSY 3264</td>
<td>Basic and Applied Statistics [MATH]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or PSY 3801</td>
<td>Introduction to Psychological Measurement and Data Analysis [MATH]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or SOC 3811</td>
<td>Social Statistics [MATH]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or STAT 3011</td>
<td>Introduction to Statistical Analysis [MATH]</td>
<td>4.0 cr</td>
</tr>
</tbody>
</table>

**APECS Electives (3 credits)**

Select one course from a specialty area.

- **Counselor Education**
  - EPSY 3302 - Introduction to Communication Skills for Educational and Community Settings (3.0 cr)
  - EPSY 5401 - Counseling Procedures (3.0 cr)
  - EPSY 5461 - Cross-Cultural Counseling (3.0 cr)

- **Psychological Foundations of Education**
  - EPSY 3101 - Creativity and Intelligence: an Introduction (3.0 cr)
  - EPSY 5119 - Mind, Brain, and Education (3.0 cr)
  - EPSY 5157 - Social & Developmental Psychology of Education (3.0 cr)

- **Quantitative Methods in Education**
  - EPSY 5221 - Principles of Educational and Psychological Measurement (3.0 cr)
  - EPSY 5247 - Qualitative Methods in Educational Psychology (3.0 cr)
  - EPSY 5271 - Becoming a Teacher of Statistics (3.0 cr)

- **School Psychology**
  - EPSY 3801 - The Science of Human Resilience and Wellbeing: Foundational Knowledge for Career and Life Success [SOCS] (3.0 cr)
  - EPSY 5802 - History & Scientific Bases of Psychology (3.0 cr)
  - EPSY 5851 - Engaging Diverse Students and Families (3.0 cr)

- **Special Education**
  - EPSY 2601 - Understanding Differences, Disabilities, and the Career of Special Education (4.0 cr)
  - EPSY 5613 - Foundations of Special Education I [DSJ] (3.0 cr)
  - EPSY 5617 - Academic and Social Interventions for Students with Mild to Moderate Disabilities (3.0 cr)
**Twin Cities Campus**

**Autism Spectrum Disorder Certificate**

*Educational Psychology*

*College of Education and Human Development*

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 12
- Degree: Autism Spectrum Disorder Certificate

The certificate program in autism spectrum disorder (ASD) is designed to prepare teachers and related service personnel to design and deliver services to children and youth with ASD and their families. ASD are developmental disorders of neurobiological origin that can affect intellectual functioning, social communication, and adaptive behavior function. This 12-credit program offers specialized training in methods of assessment, intervention, and treatment evaluation. This program offers professional development opportunities for autism resource specialists, public and private social service agency staff, personnel at public and private schools, treatment facility personnel, and psychology and education professionals.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

A GPA above 2.0 is preferred for the following:
- 2.80 already admitted to the degree-granting college
- 2.80 transferring from another University of Minnesota college
- 2.80 transferring from outside the University

By the beginning of the program, undergraduate applicants must have earned at least 60 credit hours with a minimum 2.80 GPA. Undergraduate and international students wishing to complete the certificate must be admitted to a degree program at the U of M Twin Cities campus. All applicants must submit the following materials:

- Completed online application
- if you are a current U of M student, you only need to submit this form. You do not need to submit transcripts. If you are not a current U of M student and have never submitted your official college transcripts to the University of Minnesota Twin-Cities in the past, you must arrange to have an official transcripts form all colleges or universities you have attended (even if no credit was earned) submitted to the University of Minnesota Admissions office directly from the institution.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://www.admissions.umn.edu).  

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](https://www.umn.edu/about/academics/learning-outcomes). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

All coursework must be completed for the certificate. Students will have a maximum of four years to do so from the time of admission. Students must maintain a minimum 3.00 GPA in certificate coursework to remain in the program.

**Required Coursework (12 credits)**

Students must complete the following coursework.

- EPSY 5616W - Classroom Management and Behavior Analytic Problem Solving [WI] (3.0 cr)
- EPSY 5631 - Module 1: Introduction to Augmentative and Alternative Communication (1.0 cr)
- EPSY 5632 - Module 2: Evidence-based Methods for AAC Assessment and Intervention (2.0 cr)
- EPSY 5661 - Introduction to Autism Spectrum Disorder (3.0 cr)
- EPSY 5663 - Assessment and Intervention for Individuals with Autism Spectrum Disorder (3.0 cr)
Twin Cities Campus

Business and Marketing Education B.S.
Organizational Leadership, Policy and Development
College of Education and Human Development

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 58 to 62
• Degree: Bachelor of Science

This undergraduate program focuses on business and marketing education. Coursework includes leadership, sales management, marketing, e-marketing, project management, business communication, management and supervisory development, and customer relationship management.

The program equips students with the knowledge, skills, and abilities that enable them to make meaningful contributions to organizations through employing principles and practices of business planning, project management, sales, marketing, and leadership development.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

Admission requirements include 45 credits, completed or in progress

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
First Year Experience
All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W
Take 0 - 4 credit(s) from the following:
• EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
A minimum grade of C- is required for all foundation, major, and supporting program courses. The only course that can be taken pass-fail is OLPD 4696.

At least 12 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundational Coursework
These courses are intended to be taken as prerequisites to the major; however, this is not strictly required. Students can take some of these courses as they are taking introductory courses in BME; however, it is recommended that most of these courses are finished within a student's first 90 credits.

Psychology
• EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
  • or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
  • or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
Public Speaking
OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)
or FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)

Mathematics
CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or CI 1826 - Social Change, Social Justice: An Introduction to Applied Calculus [MATH] (3.0 cr)
or EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
or EPSY 3801 - The Science of Human Resilience and Wellbeing: Foundational Knowledge for Career and Life Success [SOCS] (3.0 cr)
or MATH 1001 - Excursions in Mathematics [MATH] (3.0 cr)
or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or A higher level math course may be taken to fulfill this requirement. Consult an advisor for options.

Economics
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1102 - Principles of Macroeconomics (3.0 cr)
or ECON 1102 - Principles of Macroeconomics (4.0 cr)

Leadership
OLPD 1303 - Leadership in the Organizational Context (3.0 cr)

Future Studies
OLPD 2811 - Societies of the Future: Changing Work Contexts [TS] (3.0 cr)
or OLPD 2811H - Societies of the Future: Changing Work Contexts, Honors [TS] (3.0 cr)

Business Writing
OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
or MGMT 3033W - Business Communication [WI] (3.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Major Coursework
A total of 24 credits of major coursework is required. These 24 credits include five specific required courses (listed below), one computer applications course (options listed below), a 4-credit applied experience, and 3 credits of electives within the BME major (options listed below).
OLPD 3401 - Teaching Marketing Promotion (3.0 cr)
OLPD 3424 - Sales Training (3.0 cr)
OLPD 3318 - Introduction to Project Management (3.0 cr)
OLPD 4426 - Strategic Customer Relationship Management (3.0 cr)
OLPD 3609 - Profession and Practice of Business and Marketing Education and Human Resource Development (2.0 cr)

Computer Applications for Business and Industry
OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
or OLPD 3308 - Data-Driven Decision-Making in BME and HRD (3.0 cr)
or OLPD 3310 - Special Topics for Undergraduates (1.0 - 3.0 cr)
or OLPD 3381 - Developing Intercultural Competence (3.0 cr)

Applied Experience
All students must complete 4 credits of an applied experience. This is an opportunity to apply theory to practice and to deepen learning through "real-world" interaction. Students can complete all 4 credits in OLPD 4696, or can coordinate a combination of all or some of the options listed here. Students must consult and work closely with the applied experience coordinator.
OLPD 4696 - Applied Experience in Business Marketing Education & Human Resource Development (1.0 - 4.0 cr)
or OLPD 4421 - Practicum in Nonprofit Organizations (2.0 cr)
or LEAD 3971 - Leadership Minor: Field Experience (3.0 cr)

Electives within the Major
Students must complete 3 additional credits of electives from the following list of course options. OLPD 3310 must be taken for 3 credits.
OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
or OLPD 3310 - Special Topics for Undergraduates (1.0 - 3.0 cr)
or OLPD 3381 - Developing Intercultural Competence (3.0 cr)

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Information current as of September 02, 2020
Supporting Program

Students must create a Supporting Program of at least 12 credits. These courses must be taken outside of OLPD. This is an opportunity for students to explore a related area of interest that helps strengthen their major area of study or widens the arena for application of skills and concepts. Students are strongly encouraged to consult with the OLPD Departmental Academic Advisor before choosing Supporting Program courses. Common courses can include the following, but are not limited to these options:

Take 12 or more credit(s) from the following:

• ABUS 3301 - Introduction to Quality Management (3.0 cr)
• ABUS 4022W - Management in Organizations [WI] (3.0 cr)
• ABUS 4041 - Dynamics of Leadership (3.0 cr)
• ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
• ABUS 4104 - Management and Human Resource Practices (3.0 cr)
• ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
• ABUS 4501 - Building and Running a Small Business Enterprise (4.0 cr)
• ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
• ABUS 4702 - Applied Digital Marketing (3.0 cr)
• ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• COMM 3211 - Introduction to Media Studies (3.0 cr)
• COMM 3401 - Introduction to Communication Theory (3.0 cr)
• COMM 3411 - Introduction to Small Group Communication (3.0 cr)
• COMM 3422 - Interviewing and Communication (3.0 cr)
• COMM 3441 - Introduction to Organizational Communication (3.0 cr)
• FINA 3001 - Finance Fundamentals (3.0 cr)
• FSOS 3101 - Personal and Family Finances (3.0 cr)
• FSOS 4153 - Family Financial Counseling (3.0 cr)
• HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
• HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
• JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• MGMT 1001 - Contemporary Management (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MGMT 3004 - Business Strategy (3.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
• MGMT 4008 - Entrepreneurial Management (4.0 cr)
• MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• RM 117W - Retail Environments and Human Behavior [WI] (3.0 cr)
• RM 4123 - Living in a Consumer Society (3.0 cr)
• RM 4216 - Retail Promotions (3.0 cr)
• RM 4247 - Advanced Buying and Sourcing (3.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)
• SMGT 1701 - Introduction to Sport Management (2.0 cr)
• SMGT 3143 - Organization and Management of Sport (3.0 cr)
• SMGT 3421 - Business of Sport (3.0 cr)
• SMGT 3631 - Sport Marketing (3.0 cr)
• SMGT 3632 - Sport Sales and Fund-raising (3.0 cr)
• SPAN 3022 - Advanced Business Spanish (4.0 cr)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

• OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
• Writt 3029W - Business and Professional Writing [WI] (3.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• Technical and Professional Writing
  • WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus

DirecTrack to Teaching

Institute of Child Development, Curriculum & Instruction, Educational Psychology, Family Social Science, Kinesiology, School of, Organizational Leadership, Policy and Development, School of Social Work

College of Education and Human Development

- Program Type: Other
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 4
- This program is 8 terms (4 years) long.

Get on the path to teacher licensure as an undergraduate through DirecTrack to Teaching. The program gives undergraduates early exposure to the culture of teaching and schools. Enter the profession with confidence and competence.

Learn as part of a select group of future teachers from multiple disciplines.
Participate in guided experiences (observation, academic support, tutoring) with youth in classroom settings.
Focus on the subject area you want to teach.
Earn preferred admission status into the M.Ed/initial licensure program when certain benchmarks are met (but admission is not guaranteed).

DirecTrack to Teaching is not a stand-alone undergraduate major, and it does not lead to any particular baccalaureate degree. You will maintain your current University of Minnesota undergraduate college and major status (e.g., math major, history major, etc.) while pursuing the DirecTrack to Teaching program.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Currently enrolled University of Minnesota-Twin Cities undergraduate students with either second-term freshman status or second-term sophomore status may apply. Students who hold junior status and are interested applying to DirecTrack will be considered on a case by case basis. We are looking for exceptional students who hold promise as future educators. We want to see the following:

- A minimum grade point average (GPA) of 2.8 overall (3.0 is preferred). A minimum 3.0 overall GPA is required for maintaining your status in the program.
- Volunteer activities that show an interest in education. We look for candidates who have demonstrated their interest in teaching with activities and volunteer experiences related to children and youth.

Undergraduate transfer students from outside the University of Minnesota system who meet the above criteria are also eligible to apply.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Benchmark Minimums

You will be required to meet the following benchmarks to continue participating in the DirecTrack to Teaching program:

- Achieve and maintain a cumulative GPA of 3.00 throughout the program.
- Maintain full-time student status and good academic standing in the major, and adequate progress toward graduation.
- Take the two DirecTrack to Teaching courses (CI 3901 and CI 3902) during your time in the DirecTrack to Teaching program (two 2-credit course sequence: 4-credit total).
- Take at least one education related course per academic year after admission to DirecTrack to Teaching.
- Earn grades in DirecTrack to Teaching courses of B or higher.
Participate in at least two DirecTrack to Teaching professional development events per semester (when not enrolled in CI 3901, CI 3902 or an education related course).
Participate in the DirecTrack to Teaching learning community via the online networking site.
Complete at least 100 hours of service-learning experience through enrollment in Exploring the Teaching Profession coursework (CI 3901 and CI 3902) and on your own before graduating.

Preferred Coursework
You'll find it easiest to fulfill all your major and DirecTrack to Teaching requirements if you choose an undergraduate major that is directly related to your desired teaching field. Consult with your current college advisor, as well as with the initial licensure program advisor for your desired teaching area.

CI 3901 - Exploring the Teaching Profession I (2.0 cr)
CI 3902 - Exploring the Teaching Profession II (2.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Art Education
English Education
Mathematics Education
Science Education
Second Languages and Cultures
Social Studies Education
Special Education
Dance Education
Theatre Education
**Twin Cities Campus**

**Early Childhood B.S.**

**Institute of Child Development**

**College of Education and Human Development**

- **Program Type:** Baccalaureate
- **Requirements for this program are current for Fall 2020**
- **Required credits to graduate with this degree:** 120
- **Required credits within the major:** 47 to 60
- **Degree:** Bachelor of Science

The undergraduate program in early childhood prepares students to work with young children (birth through age eight) and their families. The curriculum includes a variety of courses that are central to early childhood teaching and child development.

The program offers students the flexibility to choose a track that aligns with their career aspirations. The Foundations of Education track prepares students for entry into the master of education (MEd)/initial licensure program in early childhood education.

The Individualized Studies track prepares graduates to work in non-licensure educational settings (including daycare centers, private schools, youth community programs, or a variety of non-profit settings), to pursue advanced degrees, or to work in other settings where a strong education in child development is useful.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Admission into the major is based on the following criteria:

- GPA of 2.5 is preferred
- Completion of CPSY 2301 or equivalent with a grade of C- or higher is preferred
- Those who have not yet completed 2301 will be expected to complete it in their first semester in the program.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**Required prerequisites**

**First Year Experience**

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.

Take 0 - 4 credit(s) from the following:
- **EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI]** (4.0 cr)

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

At least half of the upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus: Foundations of Education sub-plan 26 credits and Individualized Studies sub-plan 23 credits.

**Child Development Courses**

- **CPSY 2301 - Introduction to Child Psychology [SOCS]** (4.0 cr)
- **CPSY 4331 - Social and Personality Development** (3.0 cr)
- **CPSY 4343 - Cognitive Development** (3.0 cr)
Early Childhood Courses
Students must be admitted to the program before taking these courses. Many of the major courses have an experiential component.

- CPSY 5241 - Practicum in Early Childhood Education (3.0 cr)
- CPSY 5251W - Social and Philosophical Foundations of Early Childhood Education [WI] (3.0 cr)
- CPSY 5252 - Facilitating Social and Emotional Learning in Early Childhood Education (3.0 cr)
- CPSY 5253 - Facilitating Cognitive and Language Learning in Early Childhood Education (3.0 cr)
- CPSY 5254 - Facilitating Creative and Motor Learning in Early Childhood Education (2.0 cr)
- EPSY 5625 - Education of Infants, Toddlers, and Preschool Children with Disabilities: Introduction (2.0 cr)

Student Teaching
- CPSY 5281 - Student Teaching in Early Childhood Education (6.0 - 8.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- CPSY 5251W - Social and Philosophical Foundations of Early Childhood Education [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Foundations of Education
This sub-plan is for early childhood majors who intend to go on to post-baccalaureate early childhood education teacher licensure via the MEd in early childhood education/initial licensure program.

- Required Courses
  Take 24.5 - 25.5 credit(s) from the following:
  - Elementary Ed Courses
    - CI 3211 - Introduction to Elementary Teaching (3.0 cr)
    - CI 3212 - Practicum: Elementary Teaching (2.0 cr)
  - Foundation Courses
    - CI 5307 - Technology for Teaching and Learning (1.5 cr)
    - OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
  - Cognition
    - EPSY 3119 - Learning, Cognition, and Assessment (3.0 cr)
    - or EPSY 5001 - Learning, Cognition, and Assessment (3.0 cr)
  - Math
    - Students can choose from CI 1806 or any 1000-level 3 credit or higher MATH course with the exception of MATH 1001.
    - CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
    - or MATH 1xxx
  - Language and Literacy
    - Linguistics
      - CI 3610 - Linguistics for Teachers [SOCS] (3.0 cr)
      - or ENGL 3601 - Analysis of the English Language (4.0 cr)
      - or LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
    - Literacy
      - CI 3401W - Diversity in Children's Literature [WI] (3.0 cr)
      - CI 5413 - Foundations of Reading (3.0 cr)
      - CI 5414 - Practicum: Working With Developing Readers (2.0 cr)

Optional coursework for Additional License in Elementary Education
Students who wish to earn a license in Elementary Education need additional pre-requisite courses, but many can overlap with other university requirements. Please work closely with your academic advisors in meeting all M.Ed. pre-reqs, and to select major and liberal education courses that meet multiple requirements.

Individualized Studies
This sub-plan is for students who do not wish to go on to early childhood education teacher licensure via the MEd in early childhood education/initial licensure program.

Students will develop a Supporting Program to complement the major, consisting of at least 15 credits in consultation with the major advisor. Students must submit a program proposal during their first semester in the major to indicate these plans and interests.
Recommended areas of study and/or formal minors may include: child psychology, culture and teaching, English as a second language education, second language, family social science, applied psychology in educational and community settings, leadership, business, or public policy.

Supporting program options
These courses will be individually planned with the major advisor, via a program proposal document. Courses may not count in both the required core area and the individualized supporting area. Options below are only suggestions; many more courses are possible, per the proposal.

Take 15 or more credit(s) from the following:
- CPSY 3xxx
- CPSY 4xxx
- SW 2xxx
- SW 3xxx
- FSOS 2xxx
- FSOS 3xxx
- FSOS 4xxx
- EPSY 2xxx
- EPSY 3xxx
- EPSY 5xxx
- YOST 2xxx
- YOST 3xxx
- YOST 4xxx
- OLPD 3xxx
- OLPD 4xxx
- CI 3xxx
- CI 4xxx
- CI 5xxx
- REC 3xxx
- KIN 3xxx
- KIN 4xxx
- ASL 3xxx
- SPAN 3xxx
- SLHS 3xxx
- SLHS 4xxx
- PSY 3xxx
- PSY 4xxx
- JOUR 3xxx
- JOUR 4xxx
- COMM 3xxx
- COMM 4xxx
- SOC 3xxx
- SOC 4xxx
- PUBH 3xxx
- PA 3xxx
- PA 4xxx
Twin Cities Campus
Elementary Education: Foundations B.S.
Curriculum & Instruction
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 76
- Degree: Bachelor of Science

The bachelor of science degree program in elementary education: foundations prepares students to work with children, including those with special needs and in urban school settings.

The program does not lead directly to teaching licensure, but prepares students to enter the master of education (MEd)/initial licensure program in elementary education, which leads to state of Minnesota teaching licensure. It also prepares graduates to work in non-licensure educational settings (daycare centers or youth community programs) or other settings where a strong liberal education base is useful. The curriculum includes an extensive core of liberal education coursework that is central to elementary school teaching.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 4 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Admission into the major is based on the following criteria:
- Minimum 2.50 overall GPA; higher GPA is recommended.
- Completion of all prerequisite courses listed below for University of Minnesota students. External transfer students entering the University of Minnesota Twin Cities must complete all transfer courses listed below except CI 1001; external transfer students entering the University of Minnesota-Twin Cities may complete this course in the first semester of their program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Basic Requirements
CI 1001 - Introduction to the Elementary School (3.0 cr)
- Psychology
  EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
  or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

- Mathematics
  CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
  or CI 1826 - Social Change, Social Justice: An Introduction to Applied Calculus [MATH] (3.0 cr)
  or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)

- Science
  AST 1001 - Exploring the Universe [PHYS, ENV] (4.0 cr)
  or ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)

First Year Experience
All incoming CEHD Freshmen must complete the First-Year Inquiry course EDHD 1525W. Take 0 - 4 credit(s) from the following:
- EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 25 upper-division credits in the major must be taken at the University Twin Cities campus.

Foundation Courses
CI 5307 - Technology for Teaching and Learning (1.5 cr)
CI 4121 - Culture Power and Education (3.0 cr)
CI 4122 - Social Class Education and Pedagogy (3.0 cr)
CPSY 2301 - Introduction to Child Psychology [SOCS] (4.0 cr)

Elementary Foundation Block
The Elementary Foundation Block can be completed on campus or as a study abroad program in France by taking MONT 3211 and 3212. Students taking the Introduction to Elementary Education Block on campus will also complete their Learning Cognition and Assessment course during the same term. Students taking the Introduction to Elementary Education Study Abroad Option will take MONT 3121 satisfying their linguistic requirement.

Introduction to Elementary Education
CI 3211 - Introduction to Elementary Teaching (3.0 cr)
CI 3212 - Practicum: Elementary Teaching (2.0 cr)

or

Introduction to Elementary Education - Study Abroad Option
MONT 3211 - Introduction to Elementary School Teaching (3.0 cr)
MONT 3212 - Teaching Practicum (3.0 cr)

Learning Cognition and Assessment
EPSY 3119 - Learning, Cognition, and Assessment (3.0 cr)
or EPSY 5001 - Learning, Cognition, and Assessment (3.0 cr)

Special Education Block
EPSY 5613 - Foundations of Special Education I [DSJ] (3.0 cr)
with
EPSY 5616W - Classroom Management and Behavior Analytic Problem Solving [WI] (3.0 cr)
with
CI 3283 - Practicum: Special Education K-6 (2.0 cr)

Mathematics
Mathematics for Elementary Teachers I
MTHE 3101 - Mathematics and Pedagogy for Elementary Teachers I (3.0 cr)

Mathematics for Elementary Teachers II
MTHE 3102 - Mathematics and Pedagogy for Elementary Teachers II (3.0 cr)

Science
Physical Science with Lab
CI 1563 - Physics by Inquiry [PHYS] (4.0 cr)

or

PHYS 1001W - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)

or

PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)

or

PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)

or

PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)

or

PHYS 3071W - Laboratory-Based Physics for Teachers [PHYS, WI] (4.0 cr)

Social Studies
Human Geography
GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)

or

GEOG 1502 - Mapping Our World [TS, SOCS] (3.0 cr)

or

GEOG 1372 - Geography of Global Cities [SOCS, GP] (3.0 cr)

or

GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)

or

GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)

or

GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)

or

GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)

or

GEOG 3374W - The City in Film [AH, WI] (4.0 cr)

or

GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)

or

GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
Literacy
CI 3401W - Diversity in Children's Literature [WI] (3.0 cr)

Linguistics
CI 3610 - Linguistics for Teachers [SOCS] (3.0 cr)
or LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
or ENGL 3601 - Analysis of the English Language (4.0 cr)
or MONT 3121 - Cross-Cultural Perspectives on Language Learning (3.0 cr)

Reading Processes and Development
The Reading courses must be taken after the Special Education Block.
CI 5413 - Foundations of Reading (3.0 cr)
with CI 5414 - Practicum: Working With Developing Readers (2.0 cr)

Arts
CI 3001 - Engaged Arts Learning in Elementary Classrooms (2.0 cr)

Performing Arts
CI 1032 - Creating Identities: Learning In and Through the Arts [AH] (4.0 cr)
or MUED 3011 - Music in Childhood (3.0 cr)

Kinesiology
KIN 3327 - Teaching Physical Education in the Elementary School (2.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• CI 3401W - Diversity in Children's Literature [WI] (3.0 cr)
**Twin Cities Campus**

**Family and Community Engagement Minor**

**Family Social Science**

**College of Education and Human Development**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 12

This minor will focus on nonprofit management, community development, program development and evaluation, evidence-based programming, culturally relevant programming, family strengths, families navigating systems such as schools and hospitals.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Minor Requirements**

**Family and Community Engagement Minor Coursework**

- **FSOS 2107** - Preparation for Family and Community Engagement (3.0 cr)
- **FSOS 2103** - Family Policy (3.0 cr)
- **FSOS 4107** - Traumatic Stress and Resilience in Vulnerable Families Across the Lifespan (3.0 cr)
- **FSOS 4108** - Understanding and Working with Immigrants and Refugee Families [SOCS, DSJ] (3.0 cr)
Twin Cities Campus
Family Financial Studies Minor
Family Social Science
College of Education and Human Development

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 12

This minor will focus on preparing students to work with families around financial issues, as a financial coach, counselor, or other delivery methods.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Family Financial Studies Minor Coursework
FSOS 2108 - Preparation for Family Financial Studies: Money Matters in Families (3.0 cr)
FSOS 2106 - Family Resource Management (3.0 cr)
FSOS 3101 - Personal and Family Finances (3.0 cr)
FSOS 4153 - Family Financial Counseling (3.0 cr)
Twin Cities Campus

Family Social Science B.S.

Family Social Science
College of Education and Human Development

- Program Type: Baccalaureate
- Required credits for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 56 to 58
- Degree: Bachelor of Science

Family social science is a multidisciplinary major for those who are interested in helping people, counseling, and understanding human relationships. This major prepares graduates for careers in working with individuals, families, or systems in human services. The major is enhanced by a required internship related to the student's specific program and career goals. Qualified graduates may continue their education through graduate study in family social science, prevention science, family education, marriage and family therapy, child and human development, social work, resource management, or allied health disciplines.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

First Year Experience

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W

Take 0 - 4 credit(s) from the following:
- EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

At least 13 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Preparatory Courses

Statistics

- EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
- or STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
- or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)

Additional Course

- FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
- or FSOS 1201 - Human Development in Families: Lifespan [SOCS, DSJ] (4.0 cr)
- or FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)

Communication Courses

- FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
- or OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)
- or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)

Advanced Technical Writing

- YOST 3325W - Project-Based Writing For Education and Human Development Majors [WI] (4.0 cr)
- or OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
- or ENGL 3027W - The Essay [WI] (4.0 cr)
- or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
Major Courses
FSOS 2105 - Methods in Family Research (3.0 cr)
FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
FSOS 3105 - Technology in Parenting and Family Relationships [TS] (3.0 cr)
FSOS 4104 - Family Psychology (3.0 cr)
FSOS 4109W - Family Theories [WI] (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper-division Writing Intensive course within the major. For Family Social Science majors 4109W is required. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of the courses may also fulfill other major requirements.

Take no more than 1 course(s) from the following:
- FSOS 4109W - Family Theories [WI] (3.0 cr)
- YOST 3322W - Our Addicted World: Going Beyond the Individual in Looking at the Addiction [WI] (3.0 cr)
- OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
- ENGL 3027W - The Essay [WI] (4.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Concentration Areas
Students MUST select at least one of the three concentration areas.

Family and Community Engagement
This concentration will focus on nonprofit management, community development and evaluation, evidence-based programming, culturally relevant programming, family strengths, families navigating systems such as schools and hospitals.

FSOS 2107 - Preparation for Family and Community Engagement (3.0 cr)
FSOS 2103 - Family Policy (3.0 cr)
FSOS 4107 - Traumatic Stress and Resilience in Vulnerable Families Across the Lifespan (3.0 cr)
FSOS 4108 - Understanding and Working with Immigrants and Refugee Families [SOCS, DSJ] (3.0 cr)

Family Therapy
This concentration will prepare students for clinical work at the Bachelors level, or to apply to graduate school and obtain a certification in MSW, MFT, CSPP, counseling psychology, or another area.

FSOS 2101 - Preparation for Working With Families (3.0 cr)
FSOS 3429 - Counseling Skills Practicum I (3.0 cr)
FSOS 4111 - Introduction to Family Therapy (3.0 cr)
FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
or FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)

Family Financial Studies
This concentration will focus on preparing students to work with families around financial issues, as a financial coach, counselor, or other delivery methods.

FSOS 2106 - Family Resource Management (3.0 cr)
FSOS 3101 - Personal and Family Finances (3.0 cr)
FSOS 4153 - Family Financial Counseling (3.0 cr)
FSOS 2101 - Preparation for Working With Families (3.0 cr)
or FSOS 2107 - Preparation for Family and Community Engagement (3.0 cr)

Family Electives
Students should first select a concentration area. Next, students may choose a second concentration or take 12 credits of courses not previously taken. One course can not fulfill more than one program requirement.

Take 12 or more credit(s) from the following:
- FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
- FSOS 1201 - Human Development in Families: Lifespan [SOCS, DSJ] (4.0 cr)
- FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
- FSOS 1301 - Cash or Credit: You Need to Know (1.0 cr)
- FSOS 2101 - Preparation for Working With Families (3.0 cr)
- FSOS 2103 - Family Policy (3.0 cr)
- FSOS 2106 - Family Resource Management (3.0 cr)
- FSOS 2107 - Preparation for Family and Community Engagement (3.0 cr)
- FSOS 3101 - Personal and Family Finances (3.0 cr)
- FSOS 3222W - Our Addicted World: Going Beyond the Individual in Looking at the Addiction [WI] (3.0 cr)
- FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
- FSOS 3429 - Counseling Skills Practicum I (3.0 cr)
- FSOS 3431 - Counseling Skills Practicum II (3.0 cr)
• FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)
• FSOS 4107 - Traumatic Stress and Resilience in Vulnerable Families Across the Lifespan (3.0 cr)
• FSOS 4108 - Understanding and Working with Immigrants and Refugee Families [SOCS, DSJ] (3.0 cr)
• FSOS 4111 - Introduction to Family Therapy (3.0 cr)
• FSOS 4153 - Family Financial Counseling (3.0 cr)
• FSOS 4155 - Parent-Child Relationships (3.0 cr)
• FSOS 5150 - Special Topics in Family Social Science (1.0 - 4.0 cr)
• FSOS 5701 - Prevention Science: Principles and Practices (3.0 cr)

Advanced/Applied Skill Course
Students must take FSOS 4294 or FSOS 4296 or FSOS 4193 (for Honors students) for 4 credits.
Take 4 or more credit(s) from the following:
• FSOS 4294 - Research Internship (1.0 - 4.0 cr)
• FSOS 4296 - Field Study: Working With Families (1.0 - 12.0 cr)
• FSOS 4193 - Directed Capstone Project (1.0 - 4.0 cr)
Twin Cities Campus

Family Social Science Minor

Family Social Science

College of Education and Human Development

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16

See major description for more information.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses

FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
- FSOS 1301 - Cash or Credit: You Need to Know (1.0 cr)
- FSOS 2101 - Preparation for Working With Families (3.0 cr)
- FSOS 2103 - Family Policy (3.0 cr)
- FSOS 2106 - Family Resource Management (3.0 cr)
- FSOS 2107 - Preparation for Family and Community Engagement (3.0 cr)
- FSOS 3101 - Personal and Family Finances (3.0 cr)
- FSOS 3105 - Technology in Parenting and Family Relationships [TS] (3.0 cr)
- FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
- FSOS 3429 - Counseling Skills Practicum I (3.0 cr)
- FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)
- FSOS 4104 - Family Psychology (3.0 cr)
- FSOS 4107 - Traumatic Stress and Resilience in Vulnerable Families Across the Lifespan (3.0 cr)
- FSOS 4108 - Understanding and Working with Immigrants and Refugee Families [SOCS, DSJ] (3.0 cr)
- FSOS 4109W - Family Theories [WI] (3.0 cr)
- FSOS 4111 - Introduction to Family Therapy (3.0 cr)
- FSOS 4155 - Parent-Child Relationships (3.0 cr)
- FSOS 5701 - Prevention Science: Principles and Practices (3.0 cr)
- FSOS 3222W - Our Addicted World: Going Beyond the Individual in Looking at the Addiction [WI] (3.0 cr)
Twin Cities Campus
Family Therapy Minor
Family Social Science
College of Education and Human Development

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 12

This minor will prepare students for clinical work at the Bachelors level, or to apply to graduate school and obtain certification in SW, MFT, CSPP, counseling psychology, or another area.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Family Therapy Minor Coursework
FSOS 2101 - Preparation for Working With Families (3.0 cr)
FSOS 3429 - Counseling Skills Practicum I (3.0 cr)
FSOS 4111 - Introduction to Family Therapy (3.0 cr)
FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
or
FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)
Twin Cities Campus
Family Violence Prevention Minor
School of Social Work
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15
- n/a

The family violence prevention minor is a 15-credit undergraduate program for students interested in strengthening their educational experience with a research base and a set of practical skills in family violence prevention. It is an intensive, interdisciplinary learning experience for students in any field of study.

Courses are in fields related to social services, education, health care, and other direct services addressing issues related to child abuse and neglect, adult domestic violence, elder abuse, and inter-generational abuse. Students learn theories and research related to violent behavior, examine relationships between violence in society and violence within families, and explore different professional responses to violence. Elective courses provide the opportunity to integrate these concepts into further study within a major, or in other fields of interest.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
SW 3701 - Introduction to Child Maltreatment: Intervention and Prevention (3.0 cr)
SW 3702 - Introduction to Adult Intimate Partner Violence: Intervention and Prevention (3.0 cr)
SW 3703 - Gender Violence in Global Perspective (3.0 cr)

Elective Courses
Take 6 or more credit(s) from the following:
- YOST 4322 - Work with Youth: Families (2.0 cr)
- AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
- AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
- FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
- GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
- JWST 3520 - History of the Holocaust (3.0 cr)
- PUBH 3123 - Violence Prevention and Control: Theory, Research and Application (2.0 cr)
- SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
- SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
- SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
- SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
- SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  or SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
- or AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
- SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
  or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
Twin Cities Campus

Health and Wellness Promotion Minor

Kinesiology, School of

College of Education and Human Development

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 17
• No

The health and wellness promotion minor allows students from different disciplines to explore areas within the world of physical activity, personal health and wellness promotion to support their primary undergraduate program. The purpose of this minor is to provide students with a stronger understanding of how physical activity, personal wellness, and nutrition can be promoted in their professional career and integrated with their current academics. Students will utilize scientific findings to understand the effects of physical activity and recreation in terms of community health, individual health, and overall wellness. They will focus on the health and physical activity in the context of society and how to create and utilize programs that promote physical activity and wellness.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Required courses
KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
KIN 4214 - Health Promotion (3.0 cr)
EPSY 3801 - The Science of Human Resilience and Wellbeing: Foundational Knowledge for Career and Life Success [SOCS] (3.0 cr)

Nutrition course
Take one nutrition course from the list below or consult with your program coordinator.
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
or
FSCN 3612 - Life Cycle Nutrition (3.0 cr)
or
FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)

Physical Activity course(s)
Students need to take 2 or more credits from the following list:
PE 1007 - Beginning Swimming (1.0 cr)
or
PE 1012 - Beginning Running (1.0 cr)
or
PE 1014 - Conditioning (1.0 cr)
or
PE 1015 - Weight Training (1.0 cr)
or
PE 1016 - Posture and Individual Exercise (1.0 cr)
or
PE 1029 - Handball (1.0 cr)
or
PE 1031 - Sabre Fencing (1.0 cr)
or
PE 1032 - Badminton (1.0 cr)
or
PE 1033 - Foil Fencing (1.0 cr)
or
PE 1034 - Judo (1.0 cr)
or
PE 1035 - Karate (1.0 cr)
or
PE 1036 - Racquetball (1.0 cr)
or
PE 1037 - Squash Racquets (1.0 cr)
or
PE 1038 - Beginning Tennis (1.0 cr)
or
PE 1044 - Self-Defense (1.0 cr)
or
PE 1045 - Rock Climbing (1.0 cr)
or
PE 1046 - Tae Kwon Do (1.0 cr)
or
PE 1048 - Bowling (1.0 cr)
or
PE 1053 - Ice Skating (1.0 cr)
or
PE 1055 - Golf (1.0 cr)
or
PE 1057 - Beginning Skiing (1.0 cr)
or
PE 1058 - Snowboarding (1.0 cr)
or
PE 1065 - Beginning Tumbling and Gymnastics (1.0 cr)
or
PE 1067 - Basketball (1.0 cr)
or
PE 1071 - Beginning Cricket (1.0 cr)
or
PE 1072 - Soccer (1.0 cr)

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or PE 1074 - Beginning Volleyball (1.0 cr)
or PE 1137 - Intermediate Squash (1.0 cr)
or PE 1146 - Intermediate Tae Kwan Do (1.0 cr)
or PE 1154 - Figure Skating (1.0 cr)
or PE 1205 - Scuba and Skin Diving (1.0 cr)
or PE 1262 - Marathon Training (3.0 cr)

Elective Courses
Students must take one additional course from the designated courses. Additional electives will be available in consultation with the School of Kinesiology's health and wellness promotion minor academic advisor.

KIN 5141 - Nutrition and Exercise for Health Promotion and Disease Prevention (3.0 cr)
or KIN 5142 - Applied Nutrition for Sport Performance and Optimal Health (3.0 cr)
or FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
or FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
or FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)
or FSOS 4104 - Family Psychology (3.0 cr)
or YOST 1001 - Seeing Youth, Thinking Youth: Media, Popular Media, and Scholarship [CIV] (3.0 cr)
or YOST 2101 - Urban Youth and Youth Issues [DSJ] (4.0 cr)
or CSPH 1001 - Principles of Holistic Health and Healing (2.0 cr)
or CSPH 3001 - Introduction to Integrative Healing (3.0 cr)
or CSPH 3101 - Creating Ecosystems of Well-Being (2.0 cr)
or CSPH 3201 - Introduction to Mindfulness-Based Stress Reduction (2.0 cr)
or CSPH 3301 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)
or FSCN 1012 - Sports Nutrition (3.0 cr)
or HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
or JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
or PSY 3206 - Introduction to Health Psychology (3.0 cr)
or PUBH 3106 - Making Sense of Health Studies (2.0 cr)
or PUBH 3905 [Inactive](2.0 cr)
Twin Cities Campus

Human Resource Development B.S.
Organizational Leadership, Policy and Development
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 58 to 61
- Degree: Bachelor of Science

The undergraduate program in human resource development equips learners with the knowledge, skills, and abilities that enable them to make meaningful contributions to the advancement of organizational systems in a variety of sectors, based on the principles, methods, and tools of the fields of workplace learning, training, organization development, leadership development, and career development.

The BS prepares students for entry-level positions in training, career development, organization development, and workplace learning. Typical job titles include training coordinator, technical trainer, instructional designer, organization development assistant, training facilitator, or learning and development specialist. Undergraduate students also develop a foundation for graduate study, and such degrees are typically required for advancement in the field.

Students who complete the BS degree simultaneously earn a certificate in human resource development.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Admission requirements include 45 credits, completed or in progress.

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
First Year Experience
All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525
Take 0 - 4 credit(s) from the following:
- EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
A minimum grade of C- is required for all Foundation, Major, and Supporting Program courses. The only course that can be taken S/N is OLPD 4696.

At least 16 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.
Foundation Courses

These courses are intended to be taken as prerequisites to the major, although this is not strictly required. Students can take some of these courses as they are taking introductory courses in HRD, however most of these courses should be completed within the first 90 credits.

Psychology

EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
or
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

Public Speaking

OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)
or
FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
or
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)

Mathematics

CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or
CI 1826 - Social Change, Social Justice: An Introduction to Applied Calculus [MATH] (3.0 cr)
or
EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
or
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or
EPSY 3801 - The Science of Human Resilience and Wellbeing: Foundational Knowledge for Career and Life Success [SOCS] (3.0 cr)
or
MATH 1001 - Excursions in Mathematics [MATH] (3.0 cr)
or
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or
MATH 1051 - Precalculus I [MATH] (3.0 cr)
or
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or
MATH 1271 - Calculus I [MATH] (4.0 cr)
or
STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
or
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or
A higher level math course may be taken to fulfill this requirement. Consult an advisor for options.

Economics

APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or
APEC 1102 - Principles of Macroeconomics (3.0 cr)
or
ECON 1102 - Principles of Macroeconomics (4.0 cr)

Leadership

OLPD 1303 - Leadership in the Organizational Context (3.0 cr)

Future Studies

OLPD 2811 - Societies of the Future: Changing Work Contexts [TS] (3.0 cr)
or
OLPD 2811H - Societies of the Future: Changing Work Contexts, Honors [TS] (3.0 cr)

Business Writing

OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
or
WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
or
MGMT 3033W - Business Communication [WI] (3.0 cr)
or
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Major Courses

Students must complete a minimum of 24 credits in the major. These 24 credits include five specific required courses (list below), one computer applications course (options listed below), a 4-credit Internship, and 3 credits of electives within the HRD major (options below).

OLPD 3202 - Introduction to Strategies for Teaching Adults (3.0 cr)
OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
OLPD 3621 - Introduction to Training and Development (3.0 cr)
OLPD 3641 - Introduction to Organization Development (3.0 cr)
OLPD 3609 - Profession and Practice of Business and Marketing Education and Human Resource Development (2.0 cr)
OLPD 4696 - Applied Experience in Business Marketing Education & Human Resource Development (1.0 - 4.0 cr)

Computer Applications for Business & Industry

CI 5301 - Foundations of Computer Applications for Business and Education (3.0 cr)
or
CI 1871 - Computer Literacy and Problem Solving (4.0 cr)
or
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)

HRD Electives

Students must complete a minimum of 3 credits of electives from the following list of course options. OLPD 3310 must be taken for 3 credits.

Take 3 or more credit(s) from the following:

• OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
• OLPD 3308 - Data-Driven Decision-Making in BME and HRD (3.0 cr)
• OLPD 3310 - Special Topics for Undergraduates (1.0 - 3.0 cr)
• OLPD 3318 - Introduction to Project Management (3.0 cr)
Supporting Program

Students must create a supporting program of at least 12 credits. These courses must be taken outside of OLPD. This is an opportunity for students to explore a related area of interest that helps strengthen their major area of study or widens the arena for application of skills and concepts. Students are strongly encouraged to consult with an OLPD program advisor before choosing supporting program courses. Common courses can include the following, but are not limited to these options:

Take 12 or more credit(s) from the following:

- ABUS 4041 - Dynamics of Leadership (3.0 cr)
- ABUS 4104 - Management and Human Resource Practices (3.0 cr)
- ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
- ABUS 4702 - Applied Digital Marketing (3.0 cr)
- ACCT 3001 - Introduction to Management Accounting (3.0 cr)
- COMM 3441 - Introduction to Organizational Communication (3.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)
- HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
- HRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
- HRIR 3041 - Organizational Behavior: Work Motivation and Workplace Dynamics (2.0 cr)
- HRIR 3042 - Organizational Behavior: Groups and Teams (2.0 cr)
- HRIR 3051 - Compensation: Theory and Practice (2.0 cr)
- HRIR 3071 - Union Organizing and Labor Relations (2.0 cr)
- HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
- MGMT 3001 - Fundamentals of Management (3.0 cr)
- MGMT 3004 - Business Strategy (3.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
- MKTG 3001 - Principles of Marketing (3.0 cr)
- PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- PSY 3711 - Psychology in the Workplace (3.0 cr)
- SCO 3001 - Supply Chain and Operations (3.0 cr)
- PSY 3711 - Psychology in the Workplace (3.0 cr)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Human Resource Development Certificate
Organizational Leadership, Policy and Development
College of Education and Human Development

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 14
• Degree: Human Resource Development Certificate Ugrd

The Human Resource Development Certificate provides additional recognition of expertise in the field.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
OLPD 3601, OLPD 3620, and OLPD 3640 must be completed before enrollment in OLPD 4696 is allowed.

Required Courses
OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
OLPD 3621 - Introduction to Training and Development (3.0 cr)
OLPD 3641 - Introduction to Organization Development (3.0 cr)

Internship: Human Resource Development
OLPD 3601, OLPD 3620, and OLPD 3640 must all be completed before the student can enroll in OLPD 4696, the Internship in HRD. OLPD 4696 must be taken for a total of 2 credits, although these 2 credits can be spread over two semesters or completed in a single semester. If you have questions, please speak with the HRD Internship Advisor in OLPD by emailing ugolpd@umn.edu
OLPD 4696 - Applied Experience in Business Marketing Education & Human Resource Development (1.0 - 4.0 cr)

Electives in Human Resource Development
The remaining credits can be selected from HRD coursework or one of the following courses.
OLPD 3202 - Introduction to Strategies for Teaching Adults (3.0 cr)
or OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
or OLPD 3828 - Diversity in the Workplace (3.0 cr)
Twin Cities Campus
Integrated Degree Program B.S.
College of Education & Human Development

Program Type: Baccalaureate
Requirements for this program are current for Fall 2020
Required credits to graduate with this degree: 120
Required credits within the major: 60 to 64
Degree: Bachelor of Science

The College of Education and Human Development's (CEHD) integrated degree program (IDP) is a multidisciplinary major comprised entirely of CEHD content, which allows students to combine preexisting curricular areas in the college. Areas consist of coursework form CEHD minors, certificates, and other departmentally-designated groupings of core courses that can be combined to create an integrated course of study within the CEHD that fits the needs and interests of students. The IDP major provides structured interdisciplinary options for students which leads to increased creativity in thinking across disciplinary boundaries. The IDP major is designed for students who are primarily already admitted to CEHD. Students that transfer within the University are not eligible for admission to this major.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 30 credits before admission to the program.

Students are considered for admission based on a review of their application. The review includes factors such as GPA, grade trends, performance in coursework relevant to proposed areas of study, and demonstrated an ability to meet curricular and developmental expectations of individualized undergraduate education. Students that transfer within the University are not eligible for admission to this major.

Students must develop a degree plan that includes:
Academic and career goals
Courses proposed for the program

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.

Regardless of what minors/certificates/concentration areas students choose to integrate, one course in each of the following areas must be taken:

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
First Year Experience
All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W. Take 0 - 4 credit(s) from the following:
• EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)

Social Sciences
Take exactly 1 course(s) from the following:
• EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
• SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
• FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)

Public Speaking
OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)
or FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)

Math

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CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1151 - Precalculus II [MATH] (3.0 cr)
or EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
or CI 1826 - Social Change, Social Justice: An Introduction to Applied Calculus [MATH] (3.0 cr)

IDP Area Requirements
Students choosing the IDP sport management area are required to take SMGT 1701 before declaring their major.

Students choosing the IDP Leadership Area are required to take LEAD 1961W before declaring their major.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 25 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

List of core courses for each department in the IDP program

Applied Psychology in Educational and Community Settings
EPSY 3301, EPSY 3264, EPSY 3132, EPSY 3302

Practice Requirements
EPSY 3303

Autism Spectrum Disorder
EPSY 5616W, EPSY 5631, EPSY 5632, EPSY 5661, EPSY 5663

Business and Marketing Education
OLPD 3318, OLPD 3401, OLPD 3424, OLPD 4426

Early Childhood Education
CPSY 2301, CPSY 5241, CPSY 5252, CPSY 5253, CPSY 5254

Family and Community Engagement
FSOS 2103, FSOS 2107, FSOS, 4107, FSOS 4108

Family Financial Studies
FSOS 2106, FSOS 2108, FSOS 3101, FSOS 4153

Family Social Sciences
FSOS 1101, FSOS 3102

Family Therapy
FSOS 2101, FSOS 3429, FSOS 4110, FSOS 3426, or FSOS 4101

Family Violence Prevention
SW 3702, SW 3703, SW 3701

Health and Wellness Promotion
KIN 3001, KIN 4214, EPSY 3801, PE 1xxx (any 3 PE classes)

Human Resource Development
OLPD 3601, OLPD 3621, OLPD 3641, OLPD 4696
Leadership
Core Courses: *must be taken sequentially
LEAD 3961: Leadership, You, & Your Community
LEAD 3971: Field Experience
or
LEAD 3972: Field Experience: Intercultural Internship
LEAD 4961W: Leadership for Global Citizenship

Racial Justice in Urban Schooling
CI 3101, CI 4121, (CI 4122 or CI 5641 or CI 5464)

Social Justice
SW 3501, SW 4501, (SW 2501W or SW 1501)

Special Education
EPSY 2601, EPSY 5613, (EPSY 5114 or EPSY 3119)

Sports Coaching
Current CPR, First Aid, and AED Certification through a national certification agency
KIN 3114, KIN 4641, KIN 4687

Sport Management
SMGT 3111, SMGT 3143, SMGT 3421, SMGT 3631

Teaching English as a Second Language
LING 3001 or CI 3610 and CI 3611W and CI 3612 and CI 3613

Youth Studies
YOST 1001

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- CI 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)
- CI 4311W - Technology and Ethics in Society [CIV, WI] (3.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
- CPSY 5251W - Social and Philosophical Foundations of Early Childhood Education [WI] (3.0 cr)
- EPSY 5616W - Classroom Management and Behavior Analytic Problem Solving [WI] (3.0 cr)
- FSOS 3222W - Our Addicted World: Going Beyond the Individual in Looking at the Addiction [WI] (3.0 cr)
- FSOS 4109W - Family Theories [WI] (3.0 cr)
- KIN 3126W - Sport and Exercise Psychology [WI] (3.0 cr)
- OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
- SMGT 3881W - Senior Seminar in Sport Management [WI] (3.0 cr)
- YOST 3325W - Project-Based Writing for Education and Human Development Majors [WI] (4.0 cr)
- YOST 4401W - Young People's Spirituality and Youthwork: An Introduction [WI] (4.0 cr)
- LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)

IDP Area Requirements

Two Area Within-College Program
This plan combines courses from two area within-college programs, such as BME and ECE, or coaching and special education.
Complete 21 approved credits of upper division coursework in one area of concentration.
Complete 21 approved credits of upper division coursework in a second area of concentration.
Complete 8 credits of supporting program upper division CEHD coursework.

-OR-

Three Area Within-College Program
This plan combines courses from three area within-college programs, such as BME, ECE, and special education, coaching, youth studies, and leadership.
Complete 20 approved credits of upper division coursework in one area of concentration.
Complete 15 approved credits of upper division coursework in a second area of concentration.
Complete 15 approved credits of upper division coursework in a third area of concentration.
Twin Cities Campus
Kinesiology B.S.
Kinesiology, School of
College of Education and Human Development

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 69 to 72
• Degree: Bachelor of Science

The bachelor of science (BS) program in kinesiology is a comprehensive, science-based academic degree program centered around the physical, biological, behavioral, and social sciences related to the study of physical activity and human movement. Major coursework includes content focusing on human anatomy and physiology, exercise physiology, movement science, sport history and philosophy, sport sociology, and sport and exercise psychology.

This curriculum provides exceptional academic preparation for students interested in graduate and professional programs in allied health, biomechanics, chiropractic medicine, dentistry, ergonomics, exercise physiology, exercise rehabilitation, human factors and performance, movement science, motor performance, nursing, occupational therapy, physical education teaching licensure, physical therapy, preventative and rehabilitation medicine, sport and exercise psychology, sport management, and sport sociology.

Examples of career choices for graduates with a BS in kinesiology include: athletic performance training, athletic training, sport coaching, exercise testing and prescription in clinical and health settings, personal training in health clubs and corporate settings, pharmaceutical sales, physical and occupational therapy, physical education teaching, public health management, fitness/sport/medical device sales, and wellness and fitness specialist.

Program requirements for the majors at the College of Education and Human Development fulfill a number of the University’s required Liberal Education cores and themes. Students have multiple options for fulfilling remaining LE requirements.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

To be eligible to apply to the major, students must have:
At least 45 credits completed or in progress
Completed one course from five of the six following categories:
Psychology
Biology course with lab
Chemistry course with lab
Physics course with lab
Introduction to Kinesiology
Human Anatomy

A GPA above 2.0 is required. A GPA of 2.5, or higher, is preferred.

Students transferring into the University of Minnesota must have completed one course from each of the following categories:
Psychology
Biology course with lab
Chemistry course with lab
Physics course with lab

Once admitted to the major, transfer students will be expected to complete the following courses in their first semester:
Introduction to Kinesiology
Human Anatomy

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

**Psychology**
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
- or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
- or EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)

**Biology Course with Lab**
- BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
- or BIOL 1001H - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
- or BIOL 1009 - General Biology [BIOL] (4.0 cr)
- or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)
- or BIOL 1015 - Human Physiology, Technology, and Medical Devices [BIOL, TS] (4.0 cr)
- or FSCN 2021 - Introductory Microbiology (4.0 cr)
- or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- or BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

**Chemistry Course with Lab**
- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
- CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

**Physics Course with Lab**
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
- or PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
- or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

**Introduction to Kinesiology**
- KIN 1871 - Survey of Kinesiology, Recreation, and Sport (3.0 cr)

**Human Anatomy**
- KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
- or ANAT 3001 - Human Anatomy (3.0 cr)
- or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
- or ANAT 3611 - Principles of Human Anatomy (3.0 cr)

**General Requirements**
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

**Core Requirements**
- KIN 3112 - Introduction to Biomechanics (4.0 cr)
- KIN 3126W - Sport and Exercise Psychology [WI] (3.0 cr)
- KIN 3131W - History and Philosophy of Sport [WI] (3.0 cr)
- KIN 3132 - Introduction to Motor Development Across the Lifespan (3.0 cr)
KIN 3135 - Introduction to Motor Learning and Control (3.0 cr)
KIN 3982 - Research Methods in Kinesiology (3.0 cr)
KIN 4385 - Exercise Physiology (4.0 cr)
KIN 3385 - Human Physiology (4.0 cr)
or
PHSL 3051 - Human Physiology (4.0 cr)
SMGT 3501 - Sport in a Diverse Society [SOCS, DSJ] (3.0 cr)
or
SMGT 3501H - Sport in a Diverse Society: Honors [SOCS, DSJ] (3.0 cr)

Physical Activity Course Requirement
Take 5 credits of physical activity coursework.
Take exactly 5 credit(s) from the following:
• PE 1007 - Beginning Swimming (1.0 cr)
• PE 1012 - Beginning Running (1.0 cr)
• PE 1014 - Conditioning (1.0 cr)
• PE 1015 - Weight Training (1.0 cr)
• PE 1016 - Posture and Individual Exercise (1.0 cr)
• PE 1029 - Handball (1.0 cr)
• PE 1031 - Sabre Fencing (1.0 cr)
• PE 1032 - Badminton (1.0 cr)
• PE 1033 - Foil Fencing (1.0 cr)
• PE 1034 - Judo (1.0 cr)
• PE 1035 - Karate (1.0 cr)
• PE 1036 - Racquetball (1.0 cr)
• PE 1037 - Squash Racquets (1.0 cr)
• PE 1038 - Beginning Tennis (1.0 cr)
• PE 1044 - Self-Defense (1.0 cr)
• PE 1045 - Rock Climbing (1.0 cr)
• PE 1046 - Tae Kwon Do (1.0 cr)
• PE 1048 - Bowling (1.0 cr)
• PE 1053 - Ice Skating (1.0 cr)
• PE 1055 - Golf (1.0 cr)
• PE 1057 - Beginning Skiing (1.0 cr)
• PE 1058 - Snowboarding (1.0 cr)
• PE 1065 - Beginning Tumbling and Gymnastics (1.0 cr)
• PE 1067 - Basketball (1.0 cr)
• PE 1071 - Beginning Cricket (1.0 cr)
• PE 1072 - Soccer (1.0 cr)
• PE 1074 - Beginning Volleyball (1.0 cr)
• PE 1076 - Flag Football (1.0 cr)
• PE 1137 - Intermediate Squash (1.0 cr)
• PE 1146 - Intermediate Tae Kwan Do (1.0 cr)
• PE 1154 - Figure Skating (1.0 cr)
• PE 1205 - Scuba and Skin Diving (1.0 cr)
• PE 1262 - Marathon Training (3.0 cr)
• DNCE 1001 - Modern/Contemporary Dance Technique 1 (1.0 cr)
• DNCE 1010 - Modern/Contemporary Dance Technique 3 (1.0 - 2.0 cr)
• DNCE 1020 - Modern/Contemporary Dance Technique 4 (1.0 - 2.0 cr)
• DNCE 1040 - Modern Dance Partnering Technique (1.0 cr)
• DNCE 1101 - Ballet Technique 1 (1.0 cr)
• DNCE 1102 - Ballet Technique 2 (1.0 cr)
• DNCE 1110 - Ballet Technique 3 (2.0 cr)
• DNCE 1120 - Ballet Technique 4 (2.0 cr)
• DNCE 1201 - Jazz Technique 1 (1.0 cr)
• DNCE 1202 - Jazz Technique 2 (1.0 cr)
• DNCE 1210 - Jazz Technique 3 (1.0 cr)
• DNCE 1220 - Jazz Technique 4 (1.0 cr)
• DNCE 1301 - Tap Technique 1 (1.0 cr)
• DNCE 1302 - Tap Technique 2 (1.0 cr)
• DNCE 1313 - African Based Movement (1.0 cr)
• DNCE 1327 - Argentine Tango (1.0 cr)
• DNCE 1331 - Yoga (1.0 cr)
• DNCE 1335 - Tai Chi Ch’uan (1.0 cr)
• DNCE 1343 - Urban & Street Dance Forms 1: Introduction (1.0 cr)
• DNCE 1345 - Alexander Technique for Movement Artists (2.0 cr)
• DNCE 1349 - Contact Improvisation (1.0 cr)
Electives Requirement

Students must take a minimum of 12-credits of KIN designated coursework that support the degree program. A minimum of 6 credits must be taken at the 4xxx-5xxx level. No more than 6 credits of field experience coursework (3696, 3993, or 4967) can be used toward the elective credits. Courses that fulfill other kinesiology degree requirements cannot be used towards elective requirements. Students may wish to consult with advisor on course selection.

KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
or KIN 3114 - Prevention and Care of Athletic Injuries (3.0 cr)
or KIN 3136 - Mental Skills Training for Sport (3.0 cr)
or KIN 3505 - Intro to Human-Centered Design (3.0 cr)
or KIN 3696 - Supervised Practical Experience (1.0 - 10.0 cr)
or KIN 3993 - Directed Study in Kinesiology (1.0 - 10.0 cr)
or KIN 3993H - Directed Study in Kinesiology: Honors (1.0 - 10.0 cr)
or KIN 4001H - Honors Seminar in Kinesiology (3.0 cr)
or KIN 4133 - Perceptual-Motor Control and Learning (3.0 cr)
or KIN 4134 - The Aging Motor System (3.0 cr)
or KIN 4136 - Embodied Cognition (3.0 cr)
or KIN 4214 - Health Promotion (3.0 cr)
or KIN 4441 - Movement Neuroscience (3.0 cr)
or KIN 4520 - Current Topics in Kinesiology (2.0 - 4.0 cr)
or KIN 4641 - Training Theory & Analytics I for Sport Performance (3.0 cr)
or KIN 4687 - Principles and Theory of Sports Coaching (3.0 cr)
or KIN 4697 - Student Coaching and Seminar (3.0 cr)
or KIN 4741 - Training Theory & Analytics 2 for Sport Performance (3.0 cr)
or KIN 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
or HUMF 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
or KIN 5104 - Physical Activities for Persons with Disabilities (3.0 cr)
or KIN 5122 - Applied Exercise Physiology (3.0 cr)
or KIN 5123 - Motivational Interventions in Physical Activity (3.0 cr)
or KIN 5125 - Advances in Physical Activity and Health (3.0 cr)
or KIN 5126 - Social Psychology of Sport & Physical Activity (3.0 cr)
or KIN 5136 - Psychology of Coaching (3.0 cr)
or KIN 5141 - Nutrition and Exercise for Health Promotion and Disease Prevention (3.0 cr)
or KIN 5142 - Applied Nutrition for Sport Performance and Optimal Health (3.0 cr)
or KIN 5202 - Current Issues in Health (2.0 cr)
or KIN 5235 - Advanced Biomechanics II: Kinetics (3.0 cr)
or RSC 5235 - Advanced Biomechanics II: Kinetics (3.0 cr)
or KIN 5371 - Sport and Society (3.0 cr)
or KIN 5385 - Exercise for Healthy Aging & Disease Prevention and Management (3.0 cr)
or KIN 5435 - Advanced Theory and Techniques of Exercise Science (3.0 cr)
or KIN 5441 - Applied Sport Science Research (3.0 cr)
or KIN 5485 - Exercise Testing and Prescription (3.0 cr)
or KIN 5505 - Human-Centered Design - Principles and Applications (3.0 cr)
or KIN 5511 - Sport and Gender (3.0 cr)
or KIN 5585 - Pediatric Physiology and Health: Concepts and Applications (2.0 cr)
or KIN 5641 - Scientific Theory and Application of Training and Conditioning in Sport (3.0 cr)
or KIN 5643 - Applied Motion Capture and Movement Analysis Technology (3.0 cr)
or KIN 5720 - Special Topics in Kinesiology (2.0 - 4.0 cr)
or KIN 5723 - Psychology of Sport Injury and Rehabilitation (3.0 cr)
or KIN 5725 - Organization and Management of Physical Education and Sport (3.0 cr)
or KIN 5801 - Legal Aspects of Sport and Recreation (4.0 cr)
or KIN 5841 - Elite Performance and Environmental Considerations (3.0 cr)
or KIN 5941 - Clinical Movement Neuroscience (3.0 cr)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• KIN 3126W - Sport and Exercise Psychology [WI] (3.0 cr)
• KIN 3131W - History and Philosophy of Sport [WI] (3.0 cr)
Learning technologies is a multidisciplinary field of study that fosters knowledge about the development, adoption, and diffusion of emerging online technologies to support education and learning in daily life and in diverse contexts and professions. Connected technologies and mobile devices are transforming the way we communicate with others, access information, curate and create media for generative, educational purposes. Active engagement in today's world and workplaces requires fluency and skill in interacting with and through these tools and a critical understanding of their social, cultural, and educational impacts.

Students in the learning technologies minor program will develop expertise in using digital media and online technologies for productivity and connected learning in their field and daily life. They will gain an understanding of connected learning and participatory culture, including the sociocultural implications of technological affordances and challenges, in order to be critical consumers and ethical producers of new media in its many forms and creative capacities.

Core courses introduce a variety of technology appropriation theories and online community integration models that help explain how technology influences social outcomes as well as the relationship humans have with technology and with each other through technology. These theoretical frameworks also serve as a lens through which to closely examine technology use in unique contexts. To this end, a variety of social media platforms are introduced in the core courses to effectively communicate ideas through the use of mobile devices, instant messaging apps, web conferencing, and other online collaboration tools in ways that are applicable to a wide variety of disciplines and fields of study. Both conceptual knowledge and practical competence are gained in the minor as students develop skills in digital writing as well as video and audio content creation to support collaborative multimedia work and authoring on the web for educational purposes.

They will also learn to leverage web technologies to construct and maintain an online presence and professional identity; to facilitate and sustain engagement of an online community of users around shared interests and goals; to design creative and responsive websites and online networks; and to address ethical issues associated with web-based technologies such as digital equity. Learning in this minor program goes beyond mere technical application in order to engage students in sociocultural analysis of how connected technologies shape our experience in the world, relationships among people, and the way businesses and organizations function.

This minor program will add value to a wide range of academic majors, positioning students to become technically, ethically, and socially skilled, media-savvy leaders in their professions.

Program Delivery
This program is available:
• primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)

Minor Requirements
Required courses:
CI 3342 - Social Media & Connected Learning (3.0 cr)
CI 4311W - Technology and Ethics in Society [CIV, WI] (3.0 cr)
CI 4312 - Sex, Drugs, and the Internet: Educational Perspectives (3.0 cr)

Elective courses:
A minimum of 6 credits is required. Request approval from minor advisor for courses not included below. Note CSCI 5000 level electives have prerequisites. These would be appropriate elective options for students with an extensive computer science background who would like to broaden their studies into learning technologies.
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CSCI 1001 - Overview of Computer Science [MATH, TS] (4.0 cr)
• CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
• CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5125 - Collaborative and Social Computing (3.0 cr)
• DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
• DES 1111 - Creative Problem Solving (3.0 cr)
• DES 3131 - User Experience in Design (4.0 cr)
• DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
• EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
• FSOS 3105 - Technology in Parenting and Family Relationships [TS] (3.0 cr)
• HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
• JOUR 1501 - Digital Games and Society [AH, TS] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
• JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
• OLPD 2811 - Societies of the Future: Changing Work Contexts [TS] (3.0 cr)
• OLPD 2811H - Societies of the Future: Changing Work Contexts, Honors [TS] (3.0 cr)
• PHIL 3602 - Science, Technology, and Society (3.0 cr)
• PHIL 4615 - Minds, Bodies, and Machines (3.0 cr)
**Twin Cities Campus**

**Racial Justice in Urban Schooling**

*Curriculum & Instruction*

**College of Education and Human Development**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The 15-credit racial justice in urban schooling minor prepares students to analyze educational practices that marginalize students from non-dominant social groups and to develop alternatives through liberatory curricula and pedagogies. This minor will critique contemporary commentary on urban education and support students whose educational interest is in the intersections of race, language status, social class, gender, or sexual orientation.

The central experiences in this minor bridge theoretical analysis with transformative pedagogies of possibilities, including culturally relevant pedagogy, funds of knowledge, and inquiry approaches. Students explore the relationships among home, community, and school cultures for students of color, focusing on classroom contexts, but extending outside of school spaces to educational practices and insights of households and community organizations. Students partner with a school to produce critical digital media that address local issues of urban education. Students select additional core coursework in critical perspectives in education on either race, class, or language and in ethnic or gender studies classes.

Students who combine this minor with an undergraduate degree in liberal arts, sciences, or ethnic studies will position themselves to critically engage their communities on educational issues or for graduate work in secondary teacher licensure, educational policy, and other educational studies.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Minor Requirements**

**Minor requirements**

Required core courses (9 credits).

- CI 3101 - Issues in Urban Education (3.0 cr)
- CI 4121 - Culture Power and Education (3.0 cr)
- CI 4122 - Social Class Education and Pedagogy (3.0 cr)
  or CI 5641 - Language, Culture, and Education (3.0 cr)
  or CI 5464 - The Politics of Literacy and Race in Schools (3.0 cr)

**Ethnic Studies Elective**

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- AAS 1101 - Imagining Asian America [SOCS, DSJ] (3.0 cr)
- AAS 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
- AAS 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
- AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AFRO 1021 - Introduction to Africa [GP] (3.0 cr)
- AFRO 1023W - Introduction to African World Literature [GP, LITR, WI] (3.0 cr)
- AFRO 3301 - The Music of Black Americans [AH, DSJ] (3.0 cr)
- AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AMIN 1001 - Introduction to American Indian & Indigenous Peoples [DSJ] (3.0 cr)
- AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
- CHIC 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
- CHIC 3221 - Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>CHIC 3374</td>
<td>Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV]</td>
<td>4.0 cr</td>
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<td>CHIC 3375</td>
<td>Folklore of Greater Mexico [DSJ]</td>
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<td>CHIC 3672</td>
<td>Chicana/o Experience in the Midwest [DSJ]</td>
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<td>CHIC 3886</td>
<td>Immigration and the U.S. Latina/o Experience: Diaspora, Identity, and Community [HIS, DSJ]</td>
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<td>CHIC 4231</td>
<td>Color of Public Policy: African Americans, American Indians, Asian Americans &amp; Chicanos in the U.S.</td>
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<td>Theory in Action: Community Engagement in a Social Justice Framework [CIV]</td>
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<td>Gender and Global Politics [SOCS, GP]</td>
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<td>GWSS 3302</td>
<td>Women and the Arts [AH, DSJ]</td>
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<td>GWSS 3306</td>
<td>Pop Culture Women [AH, DSJ]</td>
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<tr>
<td>GWSS 3307</td>
<td>Feminist Film Studies [AH, DSJ]</td>
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<td>GWSS 3406</td>
<td>Gender, Labor, and Politics [SOCS, GP]</td>
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<td>CHIC 3952</td>
<td>West African History: 1800 to Present [GP]</td>
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<td>CHIC 3955</td>
<td>West African History: Pre-Contact to 1830 [HIS, DSJ]</td>
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<td>CHIC 3956</td>
<td>Social and Intellectual Movements in the African Diaspora [HIS, GP]</td>
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<td>Modern Africa in a Changing World [HIS, GP]</td>
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<td>Introduction to African American Literature and Culture I [LITR, DSJ, WI]</td>
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<td>CHIC 4525</td>
<td>Federal Indian Policy [WI]</td>
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<td>AAS 3409</td>
<td>Asian American Women's Cultural Production [AH, DSJ, WI]</td>
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<td>CHIC 3503</td>
<td>Asian American Identities, Families, &amp; Communities [SOCS, DSJ]</td>
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<td>Asian American Identities, Families &amp; Communities [SOCS, DSJ]</td>
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<td>CHIC 3682</td>
<td>American Immigration History [HIS, DSJ]</td>
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<td>American Indian History, 1850 to Present [HIS, DSJ]</td>
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<td>AAS 4311</td>
<td>Asian American Literature and Drama [LITR, DSJ]</td>
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<td>ENGL 4311</td>
<td>Asian American Literature and Drama [LITR, DSJ]</td>
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<td>Latinos in the United States: Culture and Citizenship [HIS, DSJ]</td>
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<td>Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ]</td>
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<td>CHIC 3562</td>
<td>Chicana/o Politics [SOCS, DSJ]</td>
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<td>CHIC 4232</td>
<td>Chicana/o - Latina/o Gender and Sexuality Studies [AH, DSJ]</td>
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<td>Women Write the World [LITR, GP, WI]</td>
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<td>GWSS 1003</td>
<td>Women Write the World [LITR, GP, WI]</td>
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<td>GWSS 1007</td>
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<td>Feminist Thought and Theory [AH, CIV, WI]</td>
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<td>GWSS 3407</td>
<td>Women in Early and Victorian America: 1600-1890 [HIS, DSJ]</td>
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<td>HIST 3347</td>
<td>Women in Early America: 1600-1890 [HIS, DSJ]</td>
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or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
or SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
• AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
or ENGL 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)

GENERAL ELECTIVES
Take 3 or more credits from the list provided or an additional 3 credits from the Core or Ethnic Studies Electives. Request approval from the Curriculum and Instruction Director of Undergraduate Studies for courses not included below.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• CI 1121 - Educational Movements Past and Present: Multicultural Perspectives [HIS, DSJ] (4.0 cr)
• CI 3901 - Exploring the Teaching Profession I (2.0 cr)
• CI 3902 - Exploring the Teaching Profession II (2.0 cr)
• CI 4311W - Technology and Ethics in Society [CIV, WI] (3.0 cr)
• CI 5145 - Critical Pedagogy (3.0 cr)
• CI 5472 - Teaching Critical Media Analysis in Schools (3.0 cr)
• CI 5746 - Global and Multicultural Education in the Secondary Classroom (3.0 cr)
• CI 5762 - Developing Civic Discourse in the Social Studies (3.0 cr)
• EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
• FSOS 2103 - Family Policy (3.0 cr)
• FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
• FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
• FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)
• FSOS 4155 - Parent-Child Relationships (3.0 cr)
• GEOG 1372 - Geography of Global Cities [SOCS, GP] (3.0 cr)
• HIST 3875W - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
• OLPD 4870 - Introduction to Integrating Human Rights into Organizational Leadership (3.0 cr)
• POL 3319 - Education and the American Dream [SOCS, DSJ] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3003 - Social Problems (3.0 cr)
• SOC 3452 - Education and Society (3.0 cr)
• SOC 5455 - Sociology of Education (3.0 cr)
• SW 2501W - Introduction to Social Justice [DSJ, WI] (4.0 cr)
• SW 3511W - Theories and Practices of Social Change Organizing (4.0 cr)
• WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
• WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
• URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
• URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
• YOST 3001 - Introduction to History & Philosophy of Youthwork (4.0 cr)
• YOST 2101 - Urban Youth and Youth Issues [DSJ] (4.0 cr)
• YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
• YOST 3240 - Special Topics in Youth Studies (2.0 - 8.0 cr)
• SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• YOST 3032 - Adolescent and Youth Development for Youthworkers (4.0 cr)
or YOST 5032 - Adolescent and Youth Development for Youthworkers (4.0 cr)
Twin Cities Campus

Social Justice Minor
School of Social Work
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 18

The social justice minor offers undergraduate students the opportunity to theorize about the meanings of social justice and practice “doing” social justice advocacy in community organizations. The minor is an interdisciplinary, cross-collegiate undergraduate program. Students create socially just communities and respectful spaces for all opinions in dialogue-based classrooms. Teaching faculty, students, and community groups become partners in creating and sharing in an authentic, collective learning experience. The program is based on the belief in equity and fairness in every aspect of human experience, the importance of recognizing the struggles for liberation, and the social movements of many peoples globally.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
The social justice minor requires three of the four core courses (11 to 12 credits), all of which include 30 hours of community engaged learning [CEL] in social justice organizations, and 6 credits of elective courses.

Core Courses
- SW 2501W - Introduction to Social Justice [DSJ, WI] (4.0 cr)
- or SW 1501 - Introduction to Peace Studies [GP] (3.0 cr)
- SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)
- SW 4501 - Senior Seminar in Social Justice (4.0 cr)

Electives
Take 6 or more credit(s) from the following:
- AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
- AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- AAS 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
- AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
- AFRO 3131 - Peace & Conflict in 21st Century Africa (3.0 cr)
- AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
- AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
- AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
- CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- CHIC 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
- CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
- CHIC 3886 - Immigration and the U.S. Latina/o Experience: Diaspora, Identity, and Community [HIS, DSJ] (3.0 cr)
- CI 1411 - Culture Power and Education (3.0 cr)
- CI 1412 - Social Class Education and Pedagogy (3.0 cr)
- ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
- ENGL 3505 - Protest Literature and Community Action [DSJ] (4.0 cr)
- ENGL 3506 - Social Movements & Community Education [CIV] (4.0 cr)
- GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- GLOS 3896 - Global Studies Internship (3.0 cr)
- GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
cr)
• GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
• GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
• GWSS 3406 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• GWSS 3501 - Gay, Lesbian, Bisexual and Transgender Social Movements in the United States (3.0 cr)
• HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
• SOC 3003 - Social Problems (3.0 cr)
• SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
• SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SW 3703 - Gender Violence in Global Perspective (3.0 cr)
• YOST 3317 - Performance and Social Change (3.0 cr)
• WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
• YOST 4314 - Theater Activities in Youthwork and Education (2.0 cr)
• Color of Public Policy
  • AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• Socio Perspecs on Race, Class, & Gender
  • AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
  or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• HECU
  • HECU 3571W - Inequality in America: A Political Economy Approach [WI] (4.0 cr)
  or HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity (Field Seminar) (4.0 cr)
  or HECU 3573 - Inequality in America: Internship and Integration Seminar (8.0 cr)
  or HECU 3555W - Making Media & Change: Digital Technologies, Storytelling, and Activism From Consumers to Creators [AH, CIV, WI] (4.0 cr)
  or HECU 3557 - Making Media, Making Change: Digital Technologies, Storytelling, & Activism Digital Media Internship (4.0 cr)
  or HECU 3558 - Making Media, Making Change: Digital Technologies, Storytelling, and Activism Digital Internship (8.0 cr)
  or HECU 3581 - Art for Social Change: Art and Culture in Political, Social, and Historical Context [AH] (4.0 cr)
  or HECU 3582 - Art for Social Change: Arts Praxis - Social Justice Theory and Practice in the Field [DSJ] (4.0 cr)
  or HECU 3583 - Art for Social Change: Intersections of Art, Identity and Advocacy Internship & Integration Seminar [CIV] (8.0 cr)
  or HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Field Survey & Investigation (4.0 cr)
  or HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change (4.0 cr)
  or HECU 3593 - Environmental Sustainability Sci, Public Policy, & Cmty Action Internship & Investigation (4.0 cr)
  or HECU 3594 - Environmental Sustainability Sci, Public Policy, & Cmty Action Internship (4.0 cr)
• Asian America Through Arts and Culture
  • AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
  or ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
• Arab American Experiences
  • AAS 3866 - Arab American Experiences (3.0 cr)
  or AMES 3866 - Arab American Experiences (3.0 cr)
• Chicana Studies: La Chicana in Contemporary Society
  • CHIC 3212 - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
• Grand Challenge Curriculum
  • GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
  or GCC 3021 - The Achievement Gap: Who is to Blame? [DSJ] (3.0 cr)
  or GCC 3035 - Child Labor: Work, Education, and Human Rights in Global Historical Perspective [GP] (3.0 cr)
Twin Cities Campus

Special Education B.S.
Educational Psychology
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 57 to 66
- Practicum experiences will be conducted at sites serving individuals with disabilities.
- Degree: Bachelor of Science

The bachelor of science degree program in special education (BS/SE) prepares students to serve persons with frequently occurring (high incidence) disabilities. The program emphasizes the fundamentals of special education, effective intervention strategies, and the problem-solving approach to instruction. The BS/SE undergraduate program maintains the integrity of a research-based degree program recognized nationally. The program is specifically designed for developing scientist-practitioners by focusing on the latest developments in educational research and supporting the need to make informed, data-based instructional decisions to ensure that persons with special needs reach their full potential.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 30 credits before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.75 already admitted to the degree-granting college
• 2.75 transferring from another University of Minnesota college
• 2.75 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
First Year Experience
All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.
Take 0 - 4 credit(s) from the following:
• EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)

Admission Requirements
The following courses must be complete or in progress. All prerequisites and major courses must be completed A/F unless the course is offered S/N only. Students transferring into the University of Minnesota must have completed the equivalent of first-year composition (WRIT 1301 or higher) and college algebra or higher (Math 1031 or higher). Once admitted to the major, transfer students will be expected to complete EPSY 2601 in their first semester.
EPSY 2601 - Understanding Differences, Disabilities, and the Career of Special Education (4.0 cr)

Licensure Track
CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)
or MATH 1151 - Precalculus II [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)
or Foundations Track
CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)
or MATH 1151 - Precalculus II [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least half of the upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus: Special Education Licensure sub-plan 27 credits and Special Education Foundations sub-plan 12 credits.

Program Sub-plans
Students are required to complete one of the following sub-plans.

Special Education Licensure
This track is for students who intend to become special education teachers at the completion of their degree. Graduates of this track receive a license as an Academic and Behavioral Strategist (ABS) to teach in the field of special education in grades kindergarten through age 21. Students must meet minimum performance standards in the core requirements: (a) B average in licensure coursework prior to student teaching; and (b) minimum of B- in each licensure course.

Core Requirements (38-43 credits)
- EPSY 5613 - Foundations of Special Education I [DSJ] (3.0 cr)
- EPSY 5614W - Assessment and Due Process in Special Education [WI] (3.0 cr)
- EPSY 5616W - Classroom Management and Behavior Analytic Problem Solving [WI] (3.0 cr)
- EPSY 5617 - Academic and Social Interventions for Students with Mild to Moderate Disabilities (3.0 cr)
- EPSY 5618 - Specialized Interventions for Students With Mild/Moderate Disabilities in Reading & Written Language (3.0 cr)
- EPSY 5604 - Transition From School to Work and Community Living for Persons With Special Needs (3.0 cr)
- EPSY 5650W - Collaborative Practices for the Special Educator [WI] (3.0 cr)
- EPSY 5657 - Interventions for Behavioral Problems in School Settings (3.0 cr)
- EPSY 5631 - Module 1: Introduction to Augmentative and Alternative Communication (1.0 cr)
- EPSY 5704 - Practicum: Special Education Field Experience in Middle and Secondary School Classrooms (1.0 - 2.0 cr)
- EPSY 5705 - Practicum: Special Ed Field Experience in Early Childhood SpEd (ECSE) & Elementary School Classrooms (1.0 - 2.0 cr)
- EPSY 5741 - Student Teaching: Academic and Behavioral Strategist (3.0 - 6.0 cr)
- EPSY 5699 - Experimental Teaching Seminar (2.0 cr)
- CI 5645S - Methods for Teaching English Learners (3.0 cr)
- MTHE 5355 - Mathematics for Diverse Learners (3.0 cr)

Standards of Effective Practice (7.5 credits)
All students are required to take the following courses:
- OLPD 5005 - School and Society (2.0 cr)
- OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
- CI 5307 - Technology for Teaching and Learning (1.5 cr)
- EPSY 3119 - Learning, Cognition, and Assessment (3.0 cr)
 or EPSY 5001 - Learning, Cognition, and Assessment (3.0 cr)

Other courses required for the Special Ed Major (7 credits)
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
- CPSY 2301 - Introduction to Child Psychology [SOCS] (4.0 cr)
 or CPSY 3301 - Introduction to Child Psychology [SOCS] (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- EPSY 5650W - Collaborative Practices for the Special Educator [WI] (3.0 cr)
- EPSY 5614W - Assessment and Due Process in Special Education [WI] (3.0 cr)
- EPSY 5616W - Classroom Management and Behavior Analytic Problem Solving [WI] (3.0 cr)

Foundations of Special Education for Schools and Society
This track is for students interested in receiving expertise and experience in special education but who do not want to become licensed teachers. Students supplement foundational special education training with coursework in areas of interest that relate to student professional goals in order to expand the reach of special education in schools and society. This track does not lead to the ABS license required to teach special education.
### Core Requirements (21 credits)

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<th>Course Code</th>
<th>Course Title</th>
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<td>EPSY 5614W</td>
<td>Assessment and Due Process in Special Education [WI]</td>
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<tr>
<td>EPSY 5616W</td>
<td>Classroom Management and Behavior Analytic Problem Solving [WI]</td>
<td>3.0 cr</td>
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<td>EPSY 5617</td>
<td>Academic and Social Interventions for Students with Mild to Moderate Disabilities</td>
<td>3.0 cr</td>
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<td>EPSY 5604</td>
<td>Transition From School to Work and Community Living for Persons With Special Needs</td>
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<tr>
<td>EPSY 3303</td>
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### Required Courses

**Special Ed Special Interest (2-3 credits)**

Take 1 or more course(s) from the following:

- EPSY 5661 - Introduction to Autism Spectrum Disorder (3.0 cr)
- EPSY 5625 - Education of Infants, Toddlers, and Preschool Children with Disabilities: Introduction (2.0 cr)
- EPSY 5641 - Foundations of Deaf Education (3.0 cr)
- ASL 3001 - Cultural and Sociolinguistic Views within the Deaf Community (3.0 cr)

**Human Development (3-4 credits)**

Take 1 or more course(s) from the following:

- CPSY 1334 - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
- CPSY 2301 - Introduction to Child Psychology [SOCS] (4.0 cr)
- CPSY 4302 - Infant Development (3.0 cr)
- CPSY 4303 - Adolescent Psychology (3.0 cr)
- NURS 2001 - Human Growth and Development: A Life Span Approach (3.0 cr)

**Diversity and Social Justice (9-12 credits)**

Take 3 or more course(s) from the following:

- EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
- AAS 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
- CI 3101 - Issues in Urban Education (3.0 cr)
- CI 4121 - Culture Power and Education (3.0 cr)
- CI 4122 - Social Class Education and Pedagogy (3.0 cr)
- FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
- FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
- FSOS 4108 - Understanding and Working with Immigrants and Refugee Families [SOCS, DSJ] (3.0 cr)
- LEAD 1961W - Personal Leadership in the University [WI] (3.0 cr)
- LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
- LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- SOCI 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
- SOC 3452 - Education and Society (3.0 cr)
- SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
- SW 1501 - Introduction to Peace Studies [GP] (3.0 cr)
- SW 2501W - Introduction to Social Justice [DSJ, WI] (4.0 cr)
- SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)

**Upper Division Writing Intensive within the Major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- EPSY 5605W - Collaborative Practices for the Special Educator [WI] (3.0 cr)
- EPSY 5614W - Assessment and Due Process in Special Education [WI] (3.0 cr)
- EPSY 5616W - Classroom Management and Behavior Analytic Problem Solving [WI] (3.0 cr)

**Supporting Program (15 credits)**

With the supporting program, students will work with their adviser to explore an area of interest to enhance special education coursework. Students may choose from a variety of themes, or a combination of themes, related to their professional goals in working with people with disabilities across the spectrum. Examples of supporting programs include:

**Deaf Studies**

- ASL 1701 - American Sign Language I (5.0 cr)
- ASL 1702 - American Sign Language II (5.0 cr)
- ASL 3703 - American Sign Language III (5.0 cr)
- ASL 3704 - American Sign Language IV (5.0 cr)
- EPSY 5641 - Foundations of Deaf Education (3.0 cr)

**or Speech-Language-Hearing Sciences**

- SLHS 1402 - The Talking Brain [SOCS] (3.0 cr)
- SLHS 3303 - Language Acquisition and Science (3.0 cr)
- SLHS 1301W - The Physics and Biology of Spoken Language [PHYS, WI] (4.0 cr)

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Information current as of September 02, 2020
or SLHS 1301V - The Physics and Biology of Spoken Language Honors [PHYS, WI] (4.0 cr)
SLHS 1401 - Communication Differences and Disorders [SOCS] (3.0 cr)
or SLHS 3401 - Communication Differences and Disorders [SOCS] (3.0 cr)

or Mental health, well-being, and resilience
EPSY 3801 - The Science of Human Resilience and Wellbeing: Foundational Knowledge for Career and Life Success [SOCS] (3.0 cr)

PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
HSM 3040 - Dying and Death in Contemporary Society: Implications for Intervention (2.0 cr)
PUBH 3107 - Global Public Health and the Environment (2.0 cr)
PUBH 3123 - Violence Prevention and Control: Theory, Research and Application (2.0 cr)
PUBH 3954 - Personal, Social, and Environmental Influences on the Weight-Related Health of Pediatric Populations (2.0 cr)
PUBH 3955 - Using Policy to Address the Weight-Related Health of Child and Adolescent Populations (1.0 cr)

or Elementary Ed Foundations
Reading
CI 5413 - Foundations of Reading (3.0 cr)
CI 5414 - Practicum: Working With Developing Readers (2.0 cr)
CI 5405 - Middle School Language Arts Methods (2.0 cr)
CI 3401W - Diversity in Children's Literature [WI] (3.0 cr)

or Math
MTHE 3101 - Mathematics and Pedagogy for Elementary Teachers I (3.0 cr)
MTHE 3102 - Mathematics and Pedagogy for Elementary Teachers II (3.0 cr)
CI 5822 - Mathematics Instruction in the Elementary Grades (3.0 cr)

or Social Studies
CI 4121 - Culture Power and Education (3.0 cr)
CI 4122 - Social Class Education and Pedagogy (3.0 cr)

or Science
CI 1563 - Physics by Inquiry [PHYS] (4.0 cr)

or Counseling psychology
EPSY 3302 - Introduction to Communication Skills for Educational and Community Settings (3.0 cr)

or Learning Technologies
CI 3342 - Social Media & Connected Learning (3.0 cr)
CI 2311W - Introduction to Technology and Ethics in Society [CIV, WI] (3.0 cr)
or CI 4311W - Technology and Ethics in Society [CIV, WI] (3.0 cr)
CI 2312 - Sex, Drugs, and the Internet: Educational Perspectives (3.0 cr)
or CI 4312 - Sex, Drugs, and the Internet: Educational Perspectives (3.0 cr)

or Psychological foundations of education
EPSY 5119 - Mind, Brain, and Education (3.0 cr)
EPSY 5157 - Social & Developmental Psychology of Education (3.0 cr)
Twin Cities Campus
Sport Management B.S.
Kinesiology, School of
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 80
- Degree: Bachelor of Science

The sport management major focuses on contemporary sport as a product of social, psychological, and economic phenomena. Because of its prominent role in our culture, economy, and societal behavior, sport is a popular subject for academic inquiry. Graduates may find employment in sport marketing and management, sales and fundraising, coaching, sport administration, and sport or other fitness-related occupations. The program also prepares students for graduate study in sport management.

Coursework in sport management addresses such topics as ethics and sport, sport as a sociocultural phenomenon, sport management, sport marketing and promotion, and facility and event management.

Features of the program include an 8-credit experiential course, research methods, a senior seminar, and a set of focused electives.

Program requirements for the majors at the College of Education and Human Development (CEHD) fulfill a number of the University's required liberal education (LE) cores and themes. Students have multiple options for fulfilling remaining LE requirements.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 45 credits before admission to the program.

Successful applicants will have:
45 credits completed or in progress,
Earned a 2.00 GPA, or higher, and
The required prerequisite coursework completed or in progress.

Admission preference is given to students who have:
45 credits completed,
Earned a 2.75 GPA, or higher, and/or
Completed the required prerequisite courses.

All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Admission Requirements
- KIN 1871 - Survey of Kinesiology, Recreation, and Sport (3.0 cr)
- SMGT 1701 - Introduction to Sport Management (2.0 cr)

Computer Literacy and Problem Solving
- CI 1871 - Computer Literacy and Problem Solving (4.0 cr)
  or CI 5301 - Foundations of Computer Applications for Business and Education (3.0 cr)
  or IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)

First Year Experience
All incoming CEHD Freshman must complete the First-Year Inquiry course EDHD 1525W.
Take 0 - 4 credit(s) from the following:
- EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 18 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundation Courses
Take a minimum of 14 credits from this group, with the guidance of an advisor.

PE
Take exactly 3 credit(s) from the following:
- PE 1007 - Beginning Swimming (1.0 cr)
- PE 1012 - Beginning Running (1.0 cr)
- PE 1014 - Conditioning (1.0 cr)
- PE 1015 - Weight Training (1.0 cr)
- PE 1016 - Posture and Individual Exercise (1.0 cr)
- PE 1029 - Handball (1.0 cr)
- PE 1031 - Sabre Fencing (1.0 cr)
- PE 1032 - Badminton (1.0 cr)
- PE 1033 - Foil Fencing (1.0 cr)
- PE 1034 - Judo (1.0 cr)
- PE 1035 - Karate (1.0 cr)
- PE 1036 - Racquetball (1.0 cr)
- PE 1037 - Squash Racquets (1.0 cr)
- PE 1038 - Beginning Tennis (1.0 cr)
- PE 1044 - Self-Defense (1.0 cr)
- PE 1045 - Rock Climbing (1.0 cr)
- PE 1046 - Tae Kwon Do (1.0 cr)
- PE 1048 - Bowling (1.0 cr)
- PE 1053 - Ice Skating (1.0 cr)
- PE 1055 - Golf (1.0 cr)
- PE 1057 - Beginning Skiing (1.0 cr)
- PE 1058 - Snowboarding (1.0 cr)
- PE 1065 - Beginning Tumbling and Gymnastics (1.0 cr)
- PE 1067 - Basketball (1.0 cr)
- PE 1071 - Beginning Cricket (1.0 cr)
- PE 1072 - Soccer (1.0 cr)
- PE 1074 - Beginning Volleyball (1.0 cr)
- PE 1076 - Flag Football (1.0 cr)
- PE 1077 - Lacrosse (1.0 cr)
- PE 1137 - Intermediate Squash (1.0 cr)
- PE 1146 - Intermediate Tae Kwan Do (1.0 cr)
- PE 1154 - Figure Skating (1.0 cr)
- PE 1205 - Scuba and Skin Diving (1.0 cr)
- PE 1262 - Marathon Training (3.0 cr)

Public Speaking
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
or FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
or OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)

Sociology
FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
or SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

Psychology
EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Required Core Courses
Students must complete 8 credits of SMGT 3996.
SMGT 3111 - Sports Facility and Event Management (3.0 cr)
SMGT 3143 - Organization and Management of Sport (3.0 cr)
SMGT 3421 - Business of Sport (3.0 cr)
SMGT 3501 - Sport in a Diverse Society [SOCS, DSJ] (3.0 cr)
SMGT 3601 - Ethics and Values in Sport (2.0 cr)
SMGT 3631 - Sport Marketing (3.0 cr)
SMGT 3861 - Sport and Recreation Law (3.0 cr)
KIN 3982 - Research Methods in Kinesiology (3.0 cr)
SMGT 3881W - Senior Seminar in Sport Management [WI] (3.0 cr)
SMGT 3996 - Practicum: The Sport Experience (2.0 - 8.0 cr)

Focus Electives (23 credits)
Students must take an additional 23 credits of electives in consultation with the sport management advisor. Focus Elective courses must be upper division (3000 level or higher), unless approved by your sport management advisor.
Take 23 or more credit(s) from the following:
- SMGT 3632 - Sport Sales and Fund-raising (3.0 cr)
- SMGT 3993 - Directed Study in Sport Management (1.0 - 3.0 cr)
- SMGT 3741 - Sustainability through Sport (2.0 cr)
- KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
- KIN 3126W - Sport and Exercise Psychology [WI] (3.0 cr)
- KIN 3131W - History and Philosophy of Sport [WI] (3.0 cr)
- KIN 4001H - Honors Seminar in Kinesiology (3.0 cr)
- KIN 5328 - International Sport: The Impact of the Olympic Games [HIS, GP] (3.0 cr)
- KIN 5804 - National Collegiate Athletic Association (NCAA) Compliance (2.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
- CMGT 3001W - Introduction to Construction [WI] (3.0 cr)
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- KIN 3001 - Fundamentals of Management (3.0 cr)
- KIN 3010 - Introduction to Entrepreneurship (4.0 cr)
- MKTG 3001 - Principles of Marketing (3.0 cr)
- OLDP 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
- OLDP 3401 - Teaching Marketing Promotion (3.0 cr)
- OLDP 3424 - Sales Training (3.0 cr)
- OLDP 3601 - Introduction to Human Resource Development (3.0 cr)
- OLDP 3641 - Introduction to Organization Development (3.0 cr)
- OLDP 4401 - E-Marketing (3.0 cr)
- OLDP 4426 - Strategic Customer Relationship Management (3.0 cr)
- OLDP 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
- YOST 3325W - Project-Based Writing For Education and Human Development Majors [WI] (4.0 cr)
- YOST 3001 - Introduction to History & Philosophy of Youthwork (4.0 cr)
- YOST 3032 - Adolescent and Youth Development for Youthworkers (4.0 cr)
- LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
- COMM 3211 - Introduction to Media Studies (3.0 cr)
- COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
- COMM 3441 - Introduction to Organizational Communication (3.0 cr)
- HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
- JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
- JOUR 3005 - Mass Media Effects [SOCS] (3.0 cr)
- JOUR 3006 - Visual Communication (3.0 cr)
- JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
- JOUR 4251 - Psychology of Advertising (3.0 cr)
- PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
- SCO 3001 - Supply Chain and Operations (3.0 cr)
- STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- ABUS 4041 - Dynamics of Leadership (3.0 cr)
- ABUS 4701 - Introduction to Marketing (3.0 cr)
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
APEC 1102 - Principles of Macroeconomics (3.0 cr)
WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
WRIT 3257 - Technical and Professional Presentations (3.0 cr)
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
WRIT 1301 - University Writing (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
SMGT 3881W - Senior Seminar in Sport Management [WI] (3.0 cr)
Twin Cities Campus
Sport Management Minor
Kinesiology, School of
College of Education and Human Development

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17

Sport Management is the business side of the sport industry that blends the unique aspects of sport with common business, marketing, management, and social and ethical principles.

The Sport Management minor helps prepare students for employment in the sport, entertainment, and/or fitness industries. This program allows students from any major at the University to obtain a minor in Sport Management.

Students who complete this minor may work in fields such as: professional, semi-professional, collegiate, high-school and youth sport; facilities and event management; sport marketing and sales; communications; sporting goods manufacturing management; sporting goods retail management; non-profit sports; private clubs; fitness industry management; and extreme sports.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.75 already admitted to the degree-granting college
- 2.75 transferring from another University of Minnesota college
- 2.75 transferring from outside the University

Successful applicants will have:
Earned a C- or higher in SMGT 1701 Introduction to Sport Management
Completed 45 credits
A 2.75 overall GPA

Minor application will be reviewed after the following deadlines:
- Fall Semester: Priority Deadline April 1st | Final Deadline May 15
- Spring semester: Priority Deadline November 1st | Final Deadline December 15th

Admission Prerequisite Course Requirement
SMGT 1701 - Introduction to Sport Management (2.0 cr)

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Admission Requirement
Students are required to complete SMGT 1701 prior to entry into the minor.
SMGT 1701 - Introduction to Sport Management (2.0 cr)

Minor Requirements
Required Coursework
SMGT 3111 - Sports Facility and Event Management (3.0 cr)
SMGT 3143 - Organization and Management of Sport (3.0 cr)
SMGT 3421 - Business of Sport (3.0 cr)
SMGT 3631 - Sport Marketing (3.0 cr)
Elective Coursework
Students must complete 3 credits of elective coursework.
SMGT 3501 - Sport in a Diverse Society [SOCS, DSJ] (3.0 cr)
or SMGT 3601 - Ethics and Values in Sport (2.0 cr)
or SMGT 3632 - Sport Sales and Fund-raising (3.0 cr)
or SMGT 3741 - Sustainability through Sport (2.0 cr)
or SMGT 3861 - Sport and Recreation Law (3.0 cr)
or SMGT 3993 - Directed Study in Sport Management (1.0 - 3.0 cr)
or KIN 5328 - International Sport: The Impact of the Olympic Games [HIS, GP] (3.0 cr)
Twin Cities Campus
Sports Coaching Certificate
Kinesiology, School of
College of Education and Human Development

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 12
- Degree: Coaching Certificate Ugrd

The sports coaching certificate offers basic theoretical and applied nature of coaching through an integrated series of courses, based on National Committee for Accreditation of Coaching Education (NCACE) national standards.

The educational objectives of the sports coaching certificate are for students to acquire:
- Knowledge of theoretical foundations of sport coaching.
- Knowledge and understanding of the growth and development of athletes.
- Knowledge and understanding of the psychological, social, biological, and physical aspects of coaching.
- Understand athletic injury prevention and care.
- Develop a coaching philosophy.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission is open to all University students. Automatically enroll students in the minor upon application.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must earn a C- or better in order for the course to count toward successful completion of the certificate.

Certificate Courses
Students completing the certificate are required to take the courses listed below.
- Current First Aid, CPR and AED Certification through national certification agency
- KIN 3114 - Prevention and Care of Athletic Injuries (3.0 cr)
- KIN 4641 - Training Theory & Analytics I for Sport Performance (3.0 cr)
- KIN 4687 - Principles and Theory of Sports Coaching (3.0 cr)

Elective Courses
Take 3 or more credits from the list. In addition to the courses below, any program-related course approved by the sports coaching program advisor can be applied.
- KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
- KIN 3132 - Introduction to Motor Development Across the Lifespan (3.0 cr)
- KIN 3136 - Mental Skills Training for Sport (3.0 cr)
- SMGT 3143 - Organization and Management of Sport (3.0 cr)
- KIN 4385 - Exercise Physiology (4.0 cr)
- KIN 5136 - Psychology of Coaching (3.0 cr)
- KIN 5142 - Applied Nutrition for Sport Performance and Optimal Health (3.0 cr)
• KIN 5371 - Sport and Society (3.0 cr)
• KIN 5641 - Scientific Theory and Application of Training and Conditioning in Sport (3.0 cr)
• KIN 5723 - Psychology of Sport Injury and Rehabilitation (3.0 cr)
Twin Cities Campus
Sports Coaching Minor
Kinesiology, School of
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The sports coaching minor offers an in-depth study of the theoretical and applied nature of coaching through an integrated series of courses, based on National Committee for Accreditation of Coaching Education (NCACE) national standards.

The educational objectives of the Minor in Sports Coaching are for students to acquire:
- Knowledge of theoretical foundations of sport coaching.
- Knowledge and understanding of the growth and development of athletes.
- Knowledge and understanding of the psychological, social, biological, and physical aspects of coaching.
- Understand athletic injury prevention and care.
- Develop a coaching philosophy.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission is open to all University students.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Students must earn a C- or better in order for the course to count toward successful completion of the degree.

Minor Courses
Students completing the minor are required to take the courses listed below.
Current First Aid, CPR and AED Certification through national certification agency

Core Requirements
The following 3 courses are required to complete the minor.
KIN 4687 - Principles and Theory of Sports Coaching (3.0 cr)
KIN 3114 - Prevention and Care of Athletic Injuries (3.0 cr)
KIN 4641 - Training Theory & Analytics 1 for Sport Performance (3.0 cr)

Electives
Take 6 or more credits from the list. In addition to the courses below, any program-related course approved by the sport coaching program adviser can be applied toward this minor.
Take 6 or more credit(s) from the following:
• KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
• KIN 3132 - Introduction to Motor Development Across the Lifespan (3.0 cr)
• KIN 3136 - Mental Skills Training for Sport (3.0 cr)
• KIN 4385 - Exercise Physiology (4.0 cr)
• SMGT 3143 - Organization and Management of Sport (3.0 cr)
• KIN 5136 - Psychology of Coaching (3.0 cr)
• KIN 5142 - Applied Nutrition for Sport Performance and Optimal Health (3.0 cr)
• KIN 5371 - Sport and Society (3.0 cr)
• KIN 5641 - Scientific Theory and Application of Training and Conditioning in Sport (3.0 cr)
• KIN 5723 - Psychology of Sport Injury and Rehabilitation (3.0 cr)
Twin Cities Campus

Teaching English as a Second Language Certificate

Curriculum & Instruction

College of Education and Human Development

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 14 to 15

Four courses are required to complete the undergraduate certificate: Teaching English as a Second Language.

This certificate prepares students to teach English in community ESL programs, during study abroad, or after you graduate with programs like JET (Japan Exchange and Teaching), the Peace Corps, or the Fulbright English Teaching Assistants program.

This program DOES NOT lead to state teaching certification or licensure. ESL teaching licensure is offered only at the graduate level. More information is available on the C&I website (https://www.cehd.umn.edu/ci/academics/SLE/TESL-minor.html)

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Required Courses for Certificate

Cl 3610 - Linguistics for Teachers [SOCS] (3.0 cr)
or LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
or LING 5001 - Introduction to Linguistics (4.0 cr)

Other Required Courses

Cl 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)
Cl 3613 - Intercultural Communication and English Language Teaching (3.0 cr)
Cl 3612 - Introduction to Pronunciation and Grammar for ESL Teachers (4.0 cr)
Twin Cities Campus
Teaching English as a Second Language Minor
Curriculum & Instruction
College of Education and Human Development

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 14 to 15

Four courses are required to complete the undergraduate minor: Teaching English as a Second Language.

Students learn about the structure of the English language and best practices for teaching and learning a language in formal and informal settings. The coursework can lead to further study in second language acquisition and applied linguistics at the graduate level. This program DOES NOT lead to state teaching certification or licensure needed to teach K-12 in public schools. ESL teaching licensure is offered only at the graduate level. More information is available on the C&I website (https://www.cehd.umn.edu/ci/academics/SLE/TESL-minor.html)

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Required Courses for Minor

CI 3610 - Linguistics for Teachers [SOCS] (3.0 cr)
or LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
or LING 5001 - Introduction to Linguistics (4.0 cr)

CI 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)

CI 3612 - Introduction to Pronunciation and Grammar for ESL Teachers (4.0 cr)

CI 3613 - Intercultural Communication and English Language Teaching (3.0 cr)
Twin Cities Campus

Youth Studies B.S.

School of Social Work

College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 60 to 63
- Degree: Bachelor of Science

Youth studies is an interdisciplinary program that prepares students for practice and scholarship. Faculty conduct community-based action research and evaluation on youth issues, programs, policies, and services. The major emphasizes civic engagement for young people marginalized in their communities.

Coursework focuses on everyday lives of young people, working with urban, marginalized, and other youth populations, and international and global perspectives and youth civic engagement.

Youth studies courses move students into the community through regular site visits, program observations, service-learning placements, international exchanges, and internships. Students are supported by culturally competent academic advising and one-on-one student-elder partnerships with faculty, staff, or community leaders. Qualified graduates may pursue graduate study in social work, education, or public policy.

Program requirements for the majors at the College of Education and Human Development (CEHD) fulfill a number of the University's required liberal education (LE) cores and themes. Students have multiple options for fulfilling remaining LE requirements.

The courses listed below fulfill the remaining youth studies BS LE requirements, and are designed explicitly to align with CEHD's mission by providing foundational skill development and preparation for advanced coursework in youth studies. Courses include: YOST 1366, YOST 1368W, FSOS 1211, CI 1032, CI 1121, EPSY 1261, EPSY 1281, and EDHD 1525W.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

First Year Experience

All in-coming CEHD Freshmen must complete the First-Year Inquiry course EDHD 1525W.

Take 0 - 4 credit(s) from the following:
- EDHD 1525W - First-Year Inquiry: Multidisciplinary Ways of Knowing [WI] (4.0 cr)

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

At least 19 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Preparatory Courses

YOST 1001 - Seeing Youth, Thinking Youth: Media, Popular Media, and Scholarship [CIV] (3.0 cr)

Sociology Requirement

FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)

or SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)

Statistics Requirement

EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
or STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)

Social Science Requirement
EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
or CPSY 2xxx
or POL 1xxx
or FSOS 1xxx
or GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
or ANTH 1003V - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)

College Communication Courses
FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)
YOST 3325W - Project-Based Writing For Education and Human Development Majors [WI] (4.0 cr)
or OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
or ENGL 3027W - The Essay [WI] (4.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Foundation Courses
YOST 2101 - Urban Youth and Youth Issues [DSJ] (4.0 cr)
YOST 2241 - Experiential Learning (4.0 cr)
YOST 3001 - Introduction to History & Philosophy of Youthwork (4.0 cr)
YOST 3032 - Adolescent and Youth Development for Youthsworkers (4.0 cr)
YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
YOST 4325 - Improving Everyday Youthwork: Practical Program Evaluation (3.0 cr)
or FSOS 2105 - Methods in Family Research (3.0 cr)
or SOC 3801 - Sociological Research Methods (4.0 cr)

Professional Core
Take 9 credits from the following professional core:
** YOST 3011 (3 cr) can also be applied as part of your Professional Core **
These courses are offered at the graduate level, but are not approved for the major:
YOST 5011, 5240, 5301, 5314, 5315, 5316, 5317, 5319, 5321, 5322, 5323, 5401, 5402.
YOST 3011 - Urban Youth and Youth Issues [DSJ] (3.0 cr)
or YOST 3235 - Community Building, Civic Engagement, and Civic Youthwork (4.0 cr)
or YOST 3240 - Special Topics in Youth Studies (2.0 - 8.0 cr)
or YOST 4301 - Communicating With Adolescents About Sexuality (3.0 cr)
or YOST 4314 - Theater Activities in Youthwork and Education (2.0 cr)
or YOST 4315 - Youthwork in Schools (4.0 cr)
or YOST 4316 - Media and Youth: Learning, Teaching, and Doing (2.0 cr)
or YOST 4317 - Youthwork in Contested Spaces (3.0 cr)
or YOST 4319 - Understanding Youth Subcultures (3.0 cr)
or YOST 4321 - Work with Youth: Individual (2.0 cr)
or YOST 4322 - Work with Youth: Families (2.0 cr)
or YOST 4323 - Work with Youth: Groups (2.0 cr)
or YOST 4401W - Young People's Spirituality and Youthwork: An Introduction [WI] (4.0 cr)
or YOST 4402 - Youth Policy: Enhancing Healthy Development in Everyday Life (4.0 cr)
or YOST 3011 - Young Voices: The Fight for Social Change in Croatia [GP] (3.0 cr)

Advanced/Applied Skills
8 credits minimum, to be completed during final year of study.
YOST 4196 - Youthwork Internship (4.0 cr)
YOST 4411 - Youth Research and Youth Program Evaluation (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• YOST 3325W - Project-Based Writing For Education and Human Development Majors [WI] (4.0 cr)
• YOST 4401W - Young People's Spirituality and Youthwork: An Introduction [WI] (4.0 cr)
• OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
• ENGL 3027W - The Essay [WI] (4.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Youth Studies Minor
School of Social Work
College of Education and Human Development

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16

The youth studies is a 16-credit undergraduate minor that addresses youth as an idea, youth as young people, youthhood as the everyday lives of young people, and the responses of communities to this population.

Participants in the youth studies minor learn about and critically analyze at a beginning level the families of ideas, models, concepts, discourses, and ways of understanding, responding to, and working with young people. Participants craft their unique program from among the required designated courses to prepare for graduate training/education in the many scholarly and youth work professional fields. Participants do not become trained workers with youth nor receive any certification to do youth work in any participating field.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Youth Studies Minor Courses
YOST 1001 - Seeing Youth, Thinking Youth: Media, Popular Media, and Scholarship [CIV] (3.0 cr)

Youth Studies Electives
Electives to be chosen in consultation with youth studies advisor.
Take exactly 13 credit(s) from the following:
- YOST 3xx
- YOST 4xx

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Twin Cities Campus

Agricultural and Food Business Management B.S.

Applied Economics

College of Food, Agricultural and Natural Resource Sciences

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 65 to 74
• Degree: Bachelor of Science

The agricultural and food business management major is offered jointly by the College of Food, Agricultural and Natural Resource Sciences and the Carlson School of Management. The curriculum emphasizes concepts and methods from economics and business management and their use in identifying, analyzing, and solving management problems related to food, agriculture, natural resources, and economic development. The program provides a balance between applied economics and business management studies, with a limited amount of applied science. Students may elect a variety of courses or minors in their junior and senior years to accommodate special interests and career goals.

Graduates of the curriculum are prepared for a wide range of employment opportunities in the food system and other agribusinesses. Examples of employment areas include finance and banking, management, input, commodity and food marketing, sales, administration, public and industrial relations, production management, economic and statistical analysis, managerial accounting, management information systems, and supply chain management.

Students completing the program may also pursue graduate studies in preparation for research, teaching, or continuing education positions in academic institutions, government agencies, or industry.

Students completing the agricultural food and business management major are not eligible to add a second major in applied economics due to course overlap.

Students majoring in agricultural and food business management and applied economics cannot minor in either of the department minors (AFBM or APEC). We highly encourage students to pursue a University-wide minor or, if they are in AFBM, one of the department-specific minors offered through CSOM.

Program Delivery

This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 30 credits before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

Students are admitted to the major after satisfactory completion of a pre-agricultural and food business management program. Admission standards are developed in conjunction with the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Admission Requirements

Students must complete the following management "tool" courses taken A-F before entering the program and earn a GPA of at least 2.50 in these courses.

APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
APEC 1102 - Principles of Macroeconomics (3.0 cr)
or APEC 1102H [Inactive](4.0 cr)
ECON 1102 - Principles of Macroeconomics (4.0 cr)
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students may not major in both agricultural and food business management and applied economics.

At least 21 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students considering graduate study in applied economics should take MATH 1271 and 1272 and are also encouraged to contact the graduate program (apecdgs@umn.edu) early in their college career, as additional preparation may be recommended.

Applied Economics Core
APEC 1001 - Orientation to Applied Economics (1.0 cr)
or CFAN 3201 - Career and Internship Preparation (1.0 cr)
APEC 1201 - Applications of Excel in Economics and Management (1.0 cr)
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
APEC 3002 - Managerial Economics (4.0 cr)
or APEC 3003 - Introduction to Applied Econometrics (4.0 cr)
APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)

Business Core
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or APEC 1251 - Principles of Accounting (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or APEC 3501 - Agribusiness Finance (3.0 cr)
SCO 3001 - Supply Chain and Operations (3.0 cr)
or APEC 3004 - Management Science Workshop (2.0 cr)
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
or MKTG 3001 - Principles of Marketing (3.0 cr)

Communication Core
AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
AECM 3431 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)
or MGMT 3033W - Business Communication [WI] (3.0 cr)

Experiential Learning
AECM 3096 - Experiential Learning: Production and Business (1.0 - 3.0 cr)
or AECM 4011 - Applied Agribusiness Marketing Strategies (2.0 cr)
or CFAN 2096 - Reflecting on Your Professional Experience (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)

Interdisciplinary Learning
APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
or GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

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Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take no more than 1 course(s) from the following:

- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
- APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
- MKTG 4082W - Brand Management [WI] (4.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Agricultural Markets and Risk Management
Students must take a minimum of two APEC courses (6 cr) and a minimum of two CSOM courses (6 cr) or a CSOM minor.

Markets & Risk
Take 4 or more course(s) totaling 12 or more credit(s) from the following:

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3004 - Management Science Workshop (2.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- APEC 4481 - Futures and Options Markets (3.0 cr)
- APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- BLAW 3061 - Business Law Basics (2.0 cr)
- BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
- FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
- FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
- FINA 4522 - Options & Derivatives I (2.0 cr)
- INS 4100 - Corporate Risk Management (2.0 cr)
- INS 4200 - Insurance Theory and Practice (2.0 cr)
- MGMT 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
- MGMT 4040 - Negotiation Strategies (4.0 cr)
- MKTG 3010 - Marketing Research (4.0 cr)
- MKTG 3040 - Buyer Behavior (4.0 cr)
- SCO 3045 - Sourcing and Supply Management (2.0 cr)
- SCO 3072 - Managing Technologies in the Supply Chain (2.0 cr)

Entrepreneurship and Business Management
Students must take a minimum of two APEC courses (6 cr) and a minimum of two CSOM courses (6 cr) or a CSOM minor.

Entrepreneurship & Business
Take 4 or more course(s) totaling 12 or more credit(s) from the following:

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3004 - Management Science Workshop (2.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3551 - Concept Design and Value-Added Entrepreneurship in Food, Agricultural and Natural Resource Sciences (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
- APEC 4481 - Futures and Options Markets (3.0 cr)
- APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- ACCT 5201 - Intermediate Management Accounting (2.0 cr)
- BLAW 3061 - Business Law Basics (2.0 cr)
- BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
• FINA 4221 - Principles of Corporate Finance (2.0 cr)
• HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
• MGMT 4008 - Entrepreneurial Management (4.0 cr)
• MKTG 3010 - Marketing Research (4.0 cr)

Financial Analysis and Business Management
Students must take a minimum of two APEC courses (6 cr) and a minimum of two CSOM courses (6 cr) or a CSOM minor.

Financial Management
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
• APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
• APEC 3004 - Management Science Workshop (2.0 cr)
• APEC 3811 - Principles of Farm Management (3.0 cr)
• APEC 4481 - Futures and Options Markets (3.0 cr)
• APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)
• APEC 5751 - Global Trade and Policy (3.0 cr)
• Take 2 or more course(s) totaling 6 or more credit(s) from the following:
  • ACCT 5101 - Intermediate Accounting I (4.0 cr)
  • ACCT 5102 - Intermediate Accounting II (4.0 cr)
  • ACCT 5160 - Financial Statement Analysis (2.0 cr)
  • BLAW 3061 - Business Law Basics (2.0 cr)
  • BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
  • FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
  • FINA 4122 - Banking Institutions (2.0 cr)
  • FINA 4221 - Principles of Corporate Finance (2.0 cr)
  • FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
  • FINA 4522 - Options & Derivatives I (2.0 cr)
  • FINA 4622 - International Finance (2.0 cr)
  • INS 4100 - Corporate Risk Management (2.0 cr)
  • INS 4200 - Insurance Theory and Practice (2.0 cr)

Food Sales and Industry Management
Students must take a minimum of two APEC courses (6 cr) and a minimum of two CSOM courses (6 cr) or a CSOM minor.

Food Sales & Industry Management
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
• APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
• APEC 3004 - Management Science Workshop (2.0 cr)
• APEC 3811 - Principles of Farm Management (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)
• APEC 3821 - Retail Center Management (3.0 cr)
• APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
• APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)
• APEC 4461 - Horticultural Marketing (3.0 cr)
• HORT 4461 - Horticultural Marketing (3.0 cr)
• Take 2 or more course(s) totaling 6 or more credit(s) from the following:
  • MKTG 3010 - Marketing Research (4.0 cr)
  • MKTG 3040 - Buyer Behavior (4.0 cr)
  • MKTG 4030 - Sales Management (4.0 cr)
  • MKTG 4050 - Advertising and Promotion (4.0 cr)
  • MKTG 4060 - Marketing Channels (4.0 cr)
  • MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
  • MKTG 4082W - Brand Management [WI] (4.0 cr)
  • SCO 3045 - Sourcing and Supply Management (2.0 cr)
  • SCO 3056 - Supply Chain Planning and Control (4.0 cr)
  • SCO 3072 - Managing Technologies in the Supply Chain (2.0 cr)

Individualized
A program of study under this emphasis must be approved by the major coordinator. The Individualized Emphasis is 12 credits and must include 6 credits of upper division APEC electives (excluding 3001, 3002, 3003, 3501, and 4821) and 6 credits from the Carlson
School or a CSOM minor. Emphasis area courses require a grade of C- or better.

**Individualized Area**
Select 12 credits from individual electives
12 credits from individual electives
Twin Cities Campus
Agricultural and Food Business Management Minor

Applied Economics
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 13 to 16

This minor is designed for undergraduate students who want to include courses in business management (such as marketing, finance, entrepreneurship) to enhance and/or supplement courses in their major program and prepare for careers in industry or a graduate business program. The minor has a microeconomic, firm, and industry-level focus.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
To receive a minor, students must complete Principles of Microeconomics, plus 9 credits from elective courses at the 3000 level or higher. No more than 6 credits may be counted for both a major and the agricultural and food business management minor.

AFBM Minor Courses
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
Take 9 or more credit(s) from the following:
• APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
• APEC 3002 - Managerial Economics (4.0 cr)
• APEC 3003 - Introduction to Applied Econometrics (4.0 cr)
• APEC 3004 - Management Science Workshop (2.0 cr)
• APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
• APEC 3411 - Commodity Marketing (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)
• APEC 3501 - Agribusiness Finance (3.0 cr)
• APEC 3521 - Agribusiness and Food Supply / Value Chain Issues (3.0 cr)
• APEC 3551 - Concept Design and Value-Added Entrepreneurship in Food, Agricultural and Natural Resource Sciences (3.0 cr)
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• APEC 3811 - Principles of Farm Management (3.0 cr)
• APEC 3821 - Retail Center Management (3.0 cr)
• APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
• APEC 3993 - Directed Study in Applied Economics (1.0 - 4.0 cr)
• APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
• APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
• APEC 4481 - Futures and Options Markets (3.0 cr)
• APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)
• APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
• APEC 4461 - Horticultural Marketing (3.0 cr)
or HORT 4461 - Horticultural Marketing (3.0 cr)
Twin Cities Campus

Agricultural Communication and Marketing B.S.

College of Food, Agri & Natural Resource Sciences

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 82
- Degree: Bachelor of Science

This major prepares students for careers in agricultural communication, marketing, sales, training, management, leadership, business, and extension. Agribusinesses, as well as state, federal, and marketing agencies need individuals who have a broad education in the scientific (and technical) aspects of agriculture, effective work and communication skills, and quantitative and qualitative skills to solve business problems. The scientific knowledge and technical skills necessary to become an effective agribusiness marketing or media professional are provided through requirements in the basic and agricultural sciences and are strengthened by selection of one of three areas of emphasis: crops and soils, food industries, or broad overview of food, agricultural, and environmental sciences. With 21 free-standing elective credits, all majors are encouraged to pursue a CFANS or other minor.

Program Delivery
This program is available:

- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 21 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Introductory Courses
- AECM 1001 - Introduction to Agricultural Education, Communication & Marketing (1.0 cr)
- AECM 2096 - Career Exploration & Early Field Experience in Agricultural Education, Communication, and Marketing (2.0 cr)

Communication
- AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
- AECM 3431 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)
- AECM 3444 - Layout and Design for Food, Agricultural and Natural Resource Sciences (3.0 cr)
- AECM 3434 - Utilizing Social Media for Food, Agricultural and Natural Resource Sciences (3.0 cr)
- AECM 4451W - Advanced Persuasive Writing for Agricultural and Environmental Sciences [WI] (3.0 cr)

Writing Requirement
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Technology
- AECM 3452 - Digital Media Essentials for Agriculture, Food and the Environment (3.0 cr)
- AECM 3462 - Podcasting for Science Literacy (3.0 cr)
- AECM 4432 - Advanced Video Production for Agriculture, Food and the Environment (3.0 cr)
  or AECM 4452 - Virtual Field Trip Production for Agriculture, Food & Natural Resource Science Education & Comm (3.0 cr)

Business and Marketing
- MKTG 3001 - Principles of Marketing (3.0 cr)
- AECM 4444 - Food and Agricultural Marketing Campaigns (3.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)

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or SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)

APEC 3451 - Food and Agricultural Sales (3.0 cr)
or APEC 3411 - Commodity Marketing (3.0 cr)
or APEC 3811 - Principles of Farm Management (3.0 cr)
or APEC 3551 - Concept Design and Value-Added Entrepreneurship in Food, Agricultural and Natural Resource Sciences (3.0 cr)
or AECM 3106 - Agricultural Policy and Issues in Minnesota (3.0 cr)
or APEC 4461 - Horticultural Marketing (3.0 cr)
or MKTG 3010 - Marketing Research (4.0 cr)
or MKTG 3040 - Buyer Behavior (4.0 cr)
or MKTG 4030 - Sales Management (4.0 cr)

Biological Sciences
AGRO 1101 - Biology of Plant Food Systems [BIOL] (4.0 cr)
or BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)

Mathematical Thinking
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)

Social Science
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Interdisciplinary Learning
Take 0 - 1 course(s) from the following:
• FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
• GGC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
• ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
• FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)

Experiential Learning
AECM 3096 - Experiential Learning: Production and Business (1.0 - 3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• AECM 4451W - Advanced Persuasive Writing for Agricultural and Environmental Sciences [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

A: Food, Agricultural and Natural Resource Sciences
Students must complete at least 15 credits in their area of emphasis.

Animal Science
ANSC 1101 - Introductory Animal Science (4.0 cr)

Food and Nutrition
FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
or ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
or APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
or BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
or CFAN 3512 - Sustainable Food Chains [GP] (3.0 cr)
or CFAN 3516 - Sustainable Food Systems of Italy [ENV, GP] (3.0 cr)
or CFAN 3523 - Greek Agriculture and Gastronomy: A Taste of the Mediterranean [GP] (3.0 cr)

Natural Resources
ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or CFAN 3513 - The Natural History of Norway [GP, ENV] (3.0 cr)
or CFAN 3514 - Machu Picchu: Biodiversity & Climate Change in Peru [ENV, GP] (3.0 cr)
or CFAN 3521 - Borneo Global Seminar: Tropical Wildlife Conservation & Climate Change [GP, ENV] (3.0 cr)
or CFAN 3502 - Bahamas--Tropical Marine Biology and Shark Ecology (2.0 cr)
or CFAN 3507 - Exploring Ecuador: People, Land, and Water from the Amazon to the Galapagos [ENV, GP] (3.0 cr)
or CFAN 3522 - Sustainable Akumal: Turtles, tourists, cenotes and coral reefs [GP, ENV] (3.0 cr)

Plant and Soil Science
AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
or HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or HORT 1003 - Organic Gardening: From Balconies to Backyards (3.0 cr)
or HORT 1014 - Edible Landscape [TS] (3.0 cr)
or HORT 1031 - Vines and Wines: Introduction to Viticulture and Enology (3.0 cr)
or HORT 1061 - The Sustainable Lawn (3.0 cr)
or HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
or ENT 3211 - Insect Pest Management (3.0 cr)
SOIL 2601 - The Social Life of Soil [ENV] (3.0 cr)
or SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

B: Crops and Soils
Students must complete at least 21 credits in their area of emphasis.

Physical Science
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)

Crops and Soils
AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or HORT 2100 - Agricultural Biochemistry (3.0 cr)
PLSC 3401 - Plant Genetics and Breeding (4.0 cr)
or AGRO 4605 - Strategies for Agricultural Production and Management (3.0 cr)
or ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
or FDSY 2101 - Plant Production Systems (3.0 cr)
GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
or CFAN 3512 - Sustainable Food Chains [GP] (3.0 cr)
or ENT 3211 - Insect Pest Management (3.0 cr)

C: Food Industries
Students must complete at least 19 credits in their area of emphasis.

Physical Science
FSCN 1011 - Science of Food and Cooking [PHYS] (4.0 cr)

Food Science and Nutrition
FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
or CFAN 3523 - Greek Agriculture and Gastronomy: A Taste of the Mediterranean [GP] (3.0 cr)
BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
or CSPH 3301 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)
FSCN 4131 - Food Quality (3.0 cr)
or FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
or FSCN 2001 - A Food Systems Approach to Cooking for Health and the Environment (3.0 cr)
or FSCN 2021 - Introductory Microbiology (4.0 cr)
or CFAN 3512 - Sustainable Food Chains [GP] (3.0 cr)
or CFAN 3516 - Sustainable Food Systems of Italy [ENV, GP] (3.0 cr)
**Twin Cities Campus**

**Agricultural Education B.S.**

*Applied Economics*

**College of Food, Agricultural and Natural Resource Sciences**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 91 to 102
- Degree: Bachelor of Science

The agricultural education major provides students with a broad understanding of agricultural, food, and natural resource sciences, and opportunity to develop professional educator skills. Professional courses in education and agricultural education prepare students to become effective and successful educators. Experiential learning is emphasized as students spend time in schools applying course concepts, learning from effective educators, and completing a teaching internship as a capstone activity.

While the major is focused on teaching school-based agricultural education, graduates are prepared for a variety of careers within the food and agricultural industry. Students are equipped with communication, critical thinking, and interpersonal skills; experience in the teaching and learning process; and a breadth of knowledge of the science and business of agriculture that are in demand by a wide range of employers.

Graduates take positions as agricultural education teachers or youth educators; educational and training specialists for agribusinesses, commodity organizations, extension, and nonprofits; as well as positions in sales, management, and customer relations with agribusinesses.

Students graduating in agricultural education are in demand by employers, very satisfied in their careers, and earn some of the highest average starting salaries among College of Food, Agricultural and Natural Resource Sciences (CFANS) majors. However, there are not enough graduates to meet the current demand for school-based agricultural education teachers. This demand is predicted to increase in the future, both in Minnesota and across the United States.

Students are prepared to meet teacher licensure requirements in Agricultural Education (grades 5-12) and Coordinator of Work-Based Learning (grades 9-12). The agricultural education major is a collaborative partnership between the College of Food, Agricultural and Natural Resource Sciences (CFANS) and the College of Education and Human Development (CEHD).

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://www.umn.edu/admissions).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](https://www.umn.edu/academics/undergraduate/curriculum/liberal-education).

Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

At least 18 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

**Agricultural Education**

- **AECM 5696** meets the requirement for Experiential Learning
- **AECM 1001 - Introduction to Agricultural Education, Communication & Marketing** (1.0 cr)
AECM 2096 - Career Exploration & Early Field Experience in Agricultural Education, Communication, and Marketing (2.0 cr)
AECM 5115 - Foundations of Agricultural Education (3.0 cr)
AECM 5125W - Designing Curriculum & Instruction for Agricultural Education [WI] (3.0 cr)
AECM 5135 - Instructional Methodology for Agricultural Education (3.0 cr)
AECM 5145 - Agricultural Education Classroom & Program Leadership (3.0 cr)
AECM 5155 - Agricultural Education Teaching Seminar (3.0 cr)
AECM 5696 - Teaching Internship (2.0 - 10.0 cr)

Communication
AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Education
CI 4602 - English Learners and Academic Language (1.0 cr)
CI 5163 - Child and Adolescent Development for Teaching and Learning I (1.0 cr)
CI 5164 - Child and Adolescent Development for Teaching and Learning II (2.0 cr)
CI 5307 - Technology for Teaching and Learning (1.5 cr)
CI 5452 - Reading in the Content Areas for Initial Licensure Candidates (1.0 - 2.0 cr)
EPSY 4001 - Teaching Students with Special Needs in Inclusive Settings (1.0 cr)
OLPD 5005 - School and Society (2.0 cr)
OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)

Animal Science
ANSC 1101 - Introductory Animal Science (4.0 cr)
ANSC 1011 - Animals and Society [CIV] (3.0 cr)
or ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
or ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
or ANSC 2401 - Animal Nutrition (3.0 cr)
or ANSC 3221 - Animal Breeding (4.0 cr)
or ANSC 3509 - Animal Biotechnology [BIOL, TS] (4.0 cr)

Applied Economics & Agribusiness
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
APEC 1251 - Principles of Accounting (3.0 cr)
or APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
or APEC 3411 - Commodity Marketing (3.0 cr)
or APEC 3451 - Food and Agricultural Sales (3.0 cr)
or APEC 3811 - Principles of Farm Management (3.0 cr)
or APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)

Food Systems
ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
or BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)

Natural Resources
Take 3 or more credit(s) from the following:
• BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
• EEB 3001 - Ecology and Society [ENV] (3.0 cr)
• ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
• FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
• FNRM 1xxx
• FNRM 2xxx
• FNRM 3xxx
• FNRM 4xxx
• FNRM 5xxx

Plant Science
AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
or CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
or ENT 3211 - Insect Pest Management (3.0 cr)
or HORT 1003 - Organic Gardening: From Balconies to Backyards (3.0 cr)
or HORT 1014 - Edible Landscape [TS] (3.0 cr)
or HORT 1061 - The Sustainable Lawn (3.0 cr)
or HORT 1113 - Floral Design (3.0 cr)
or HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)

**Soil Science**
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

**Technology**
AECM 2051 - Current Technical Competencies (4.0 cr)
AECM 3051 - Building Construction/Woodworking Technology (4.0 cr)

**Biological Sciences**
HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or AGRO 1101 - Biology of Plant Food Systems [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)

**Physical Science**
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)

**Mathematical Thinking**
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)

**Social Science**
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

**Interdisciplinary Learning**
Take 0 - 1 course(s) from the following:
• ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
• FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
• FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• AECM 5125W - Designing Curriculum & Instruction for Agricultural Education [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Agronomy Minor
Agronomy & Plant Genetics
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 17 to 19

This minor provides strong science-based courses emphasizing crop management in the context of sustainable ecosystems. It is well suited for students majoring in agriculture, food, and environmental education; animal science; business and economics; environmental science; or for students seeking knowledge and principles of crop production.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
No more than 6 credits may count toward a student's major(s) and this minor. A minimum GPA of 2.00 is required for minor program coursework.

Minor Courses
AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Electives
Take 9 or more credit(s) from the following:
• AGRO 2022 - Growth and Development of Minnesota Field Crops (1.0 cr)
• AGRO 2402 - The Science of Cannabis (2.0 cr)
• AGRO 2501 - Plant Identification for Urban and Rural Landscapes (1.0 cr)
• AGRO 2502 - Introduction to Integrated Weed Management (1.0 cr)
• AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
• AGRO 3660 - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
• AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
• AGRO 4605 - Strategies for Agricultural Production and Management (3.0 cr)
• AGRO 4888 - Issues in Sustainable Agriculture (2.0 cr)
• CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
• PLPA 2001 - Introductory Plant Pathology (3.0 cr)
• PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
• PLSC 3401 - Plant Genetics and Breeding (4.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
Twin Cities Campus

Animal Science B.S.
Animal Science
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 65 to 88
• This program requires summer terms.
• Degree: Bachelor of Science

The animal science major prepares students for veterinary school, work as managers or technical advisors for animal production systems, various careers in animal industries or biotechnology, or graduate study in animal-related specializations. Areas of emphasis include industry and business, production, companion animal, equine, or pre-veterinary science. In addition, depending on the area of emphasis, students may select from the following areas of study: dairy, beef, sheep, swine, equine, companion animal, or poultry.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 9 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Foundation Courses
BIOL 1009 - General Biology [BIOL] (4.0 cr)
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
  or MATH 1142 - Short Calculus [MATH] (4.0 cr)
  or MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1155 - Intensive Precalculus [MATH] (5.0 cr)
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
  or AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)

Professional Courses
ANSC 1101 - Introductory Animal Science (4.0 cr)
ANSC 3011 - Statistics for Animal Science (4.0 cr)
ANSC 2401 - Animal Nutrition (3.0 cr)
ANSC 3221 - Animal Breeding (4.0 cr)
ANSC 3301 - Human and Animal Physiology (3.0 cr)
ANSC 3302 - Human and Animal Physiology Laboratory (1.0 cr)
Choose at least 1 course or course grouping:
Take 1 or more course(s) from the following:
• ANSC 4601 - Pork Production Systems Management (4.0 cr)
• ANSC 4602 - Sheep Production Systems Management (4.0 cr)
• ANSC 4603 - Beef Production Systems Management (4.0 cr)
• ANSC 4604 - Dairy Production Systems Management (4.0 cr)
• VCS 4606 - Small Animal Management (3.0 cr)
• Approved course from Midwest Poultry Consortium

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Information current as of September 02, 2020
• ANSC 2055 - Horse Management (2.0 cr)
• ANSC 2056 - Horse Management Practicum (2.0 cr)

Experiential Learning
Students must take a minimum of 1 credit of an internship or a minimum of 6 credits of a senior thesis.
- ANSC 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
  or
- ANSC 4009W - Undergraduate Research Thesis [WI] (1.0 - 6.0 cr)

Interdisciplinary Learning
Take 1 or more course(s) from the following:
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
- CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
- ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
- PLPA 2003 - Plague, Famine, and Beer: The Impact of Microscopic Organisms on Human Civilization [HIS] (3.0 cr)
- GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
- GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
  or
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
  or
- GCC 5001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 3007 - Toward Conquest of Disease [ENV] (3.0 cr)
  or
- GCC 5007 - Toward Conquest of Disease [ENV] (3.0 cr)
- GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
  or
- GCC 5031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
- GCC 3013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
  or
- GCC 5013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
- GCC 3013 - Toward Conquest of Disease [ENV] (3.0 cr)
  or
- GCC 5013 - Toward Conquest of Disease [ENV] (3.0 cr)
- GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
  or
- GCC 5031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
- GCC 3013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
  or
- GCC 5013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)

Upper-division writing intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
- ANSC 4009W - Undergraduate Research Thesis [WI] (1.0 - 6.0 cr)
- APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
- APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
- ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
- ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
  or
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Industry and Business

Industry and Business Core Courses
- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
  or
- HORT 2100 - Agricultural Biochemistry (3.0 cr)
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or
- APEC 1251 - Principles of Accounting (3.0 cr)
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- APEC 3002 - Managerial Economics (4.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3501 - Agribusiness Finance (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- APEC 3821 - Retail Center Management (3.0 cr)
- APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
- APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- COMM 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)

Animal Science Electives
Courses cannot fulfill two areas unless they are also a liberal education requirement. Take 6 or more credits from the following:

- AECE 2051 - Current Technical Competencies (4.0 cr)
- AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
- ANSC 1011 - Animals and Society [CIV] (3.0 cr)
- ANSC 1201 - Backyard Chickens - Science and Practice (3.0 cr)
- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
- ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
- ANSC 2015 - Animal Welfare Science and Ethics (3.0 cr)
- ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
- ANSC 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3015 - Animal Welfare Judging and Assessment (3.0 cr)
- ANSC 3305 - Reproductive Biology in Health and Disease (4.0 cr)
- ANSC 3307 - Artificial Insemination Techniques (1.0 cr)
- ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
- ANSC 3509 - Animal Biotechnology [BIOL, TS] (4.0 cr)
- ANSC 3511 - Animal Growth and Development (3.0 cr)
- ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
- ANSC 3801 - Livestock Merchandising (3.0 cr)
- ANSC 4011 - Dairy Cattle Genetics (3.0 cr)
- ANSC 4092 - Special Problems in Animal Science (1.0 - 4.0 cr)
- ANSC 4099 - Special Workshop in Animal Science (1.0 - 4.0 cr)
- ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
- ANSC 4401 - Swine Nutrition (3.0 cr)
- ANSC 4403 - Ruminant Nutrition of Production & Exotic Animals (3.0 cr)
- ANSC 4404 - Applied Dairy Nutrition (2.0 cr)
- ANSC 4601 - Pork Production Systems Management (4.0 cr)
- ANSC 4602 - Sheep Production Systems Management (4.0 cr)
- ANSC 4603 - Beef Production Systems Management (4.0 cr)
- ANSC 4604 - Dairy Production Systems Management (4.0 cr)
- ANSC 4613 - Advanced Beef Production Systems Management (2.0 cr)
- ANSC 4614 - Advanced Dairy Production Systems Management (4.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 2021 - Introductory Microbiology (4.0 cr)
- GCD 3022 - Genetics (3.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- VBS 2100 - Companion Animal Anatomy (3.0 cr)
- VCS 4606 - Small Animal Management (3.0 cr)
- CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
Production

Production Core Courses

- ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
  or HORT 2100 - Agricultural Biochemistry (3.0 cr)

Animal Science Electives

Courses cannot fulfill two areas unless they are also a liberal education requirement. Students should choose a concentration area in at least one species. Consult an advisor with questions.

Take 18 or more credit(s) from the following:

- AECM 2051 - Current Technical Competencies (4.0 cr)
- ANSC 1011 - Animals and Society [CIV] (3.0 cr)
- ANSC 1201 - Backyard Chickens - Science and Practice (3.0 cr)
- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
- ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
- ANSC 2015 - Animal Welfare Science and Ethics (3.0 cr)
- ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
- ANSC 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3015 - Animal Welfare Judging and Assessment (3.0 cr)
- ANSC 3305 - Reproductive Biology in Health and Disease (4.0 cr)
- ANSC 3307 - Artificial Insemination Techniques (1.0 cr)
- ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
- ANSC 3509 - Animal Biotechnology [BIOL, TS] (4.0 cr)
- ANSC 3511 - Animal Growth and Development (3.0 cr)
- ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
- ANSC 3801 - Livestock Merchandising (3.0 cr)
- ANSC 4011 - Dairy Cattle Genetics (3.0 cr)
- ANSC 4092 - Special Problems in Animal Science (1.0 - 4.0 cr)
- ANSC 4099 - Special Workshop in Animal Science (1.0 - 4.0 cr)
- ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
- ANSC 4401 - Swine Nutrition (3.0 cr)
- ANSC 4403 - Ruminant Nutrition of Production & Exotic Animals (3.0 cr)
- ANSC 4404 - Applied Dairy Nutrition (2.0 cr)
- ANSC 4601 - Pork Production Systems Management (4.0 cr)
- ANSC 4602 - Sheep Production Systems Management (4.0 cr)
- ANSC 4603 - Beef Production Systems Management (4.0 cr)
- ANSC 4604 - Dairy Production Systems Management (4.0 cr)
- ANSC 4613 - Advanced Beef Production Systems Management (2.0 cr)
- ANSC 4614 - Advanced Dairy Production Systems Management (4.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 2021 - Introductory Microbiology (4.0 cr)
- GCD 3022 - Genetics (3.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- VBS 2100 - Companion Animal Anatomy (3.0 cr)
- VCS 4606 - Small Animal Management (3.0 cr)
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
  or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- Midwest Poultry Consortium Summer Courses - Madison, WI
- Any CFANS Major Study/Learning Abroad Course
Companion Animal

Companion Animal Core Courses

ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or HORT 2100 - Agricultural Biochemistry (3.0 cr)

Take 2 or more course(s) from the following:

- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
- ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
- ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
- VBS 2100 - Companion Animal Anatomy (3.0 cr)

Animal Science Electives

Courses cannot fulfill two areas unless they are also also a liberal education requirement. Take 11 or more credit(s) from the following:

- AECM 2051 - Current Technical Competencies (4.0 cr)
- AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
- ANSC 1011 - Animals and Society [CIV] (3.0 cr)
- ANSC 1201 - Backyard Chickens - Science and Practice (3.0 cr)
- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
- ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
- ANSC 2015 - Animal Welfare Science and Ethics (3.0 cr)
- ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
- ANSC 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3015 - Animal Welfare Judging and Assessment (3.0 cr)
- ANSC 3305 - Reproductive Biology in Health and Disease (4.0 cr)
- ANSC 3307 - Artificial Insemination Techniques (1.0 cr)
- ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
- ANSC 3509 - Animal Biotechnology [BIOL, TS] (4.0 cr)
- ANSC 3511 - Animal Growth and Development (3.0 cr)
- ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
- ANSC 3801 - Livestock Merchandising (3.0 cr)
- ANSC 4011 - Dairy Cattle Genetics (3.0 cr)
- ANSC 4092 - Special Problems in Animal Science (1.0 - 4.0 cr)
- ANSC 4099 - Special Workshop in Animal Science (1.0 - 4.0 cr)
- ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
- ANSC 4401 - Swine Nutrition (3.0 cr)
- ANSC 4403 - Ruminant Nutrition of Production & Exotic Animals (3.0 cr)
- ANSC 4404 - Applied Dairy Nutrition (2.0 cr)
- ANSC 4601 - Pork Production Systems Management (4.0 cr)
- ANSC 4602 - Sheep Production Systems Management (4.0 cr)
- ANSC 4603 - Beef Production Systems Management (4.0 cr)
- ANSC 4604 - Dairy Production Systems Management (4.0 cr)
- ANSC 4613 - Advanced Beef Production Systems Management (2.0 cr)
- ANSC 4614 - Advanced Dairy Production Systems Management (4.0 cr)
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 2021 - Introductory Microbiology (4.0 cr)
- GCD 3022 - Genetics (3.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- VBS 2100 - Companion Animal Anatomy (3.0 cr)
- VCS 4606 - Small Animal Management (3.0 cr)
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

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Information current as of September 02, 2020
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

• Midwest Poultry Consortium Summer Courses - Madison, WI
• Study/Learning Abroad Course

Equine

Equine Core Courses
Students in this emphasis are encouraged to take ANSC 2055 Horse Management and ANSC 2056 Horse Management Practicum to meet the management course requirement.

AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)

or HORT 2100 - Agricultural Biochemistry (3.0 cr)

Take 2 or more course(s) from the following:
• ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
• ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
• ANSC 3007 - Equine Nutrition (3.0 cr)
• ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
• APEC 1251 - Principles of Accounting (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)

Animal Science Electives
Courses cannot fulfill two areas unless they are also a liberal education requirement.

Take 8 or more credit(s) from the following:
• AECM 2051 - Current Technical Competencies (4.0 cr)
• ANSC 1011 - Animals and Society [CIV] (3.0 cr)
• ANSC 1202 - Backyard Chickens - Science and Practice (3.0 cr)
• ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
• ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
• ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
• ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
• ANSC 2015 - Animal Welfare Science and Ethics (3.0 cr)
• ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
• ANSC 2055 - Horse Management (2.0 cr)
• ANSC 2056 - Horse Management Practicum (2.0 cr)
• ANSC 3007 - Equine Nutrition (3.0 cr)
• ANSC 3015 - Animal Welfare Judging and Assessment (3.0 cr)
• ANSC 3305 - Reproductive Biology in Health and Disease (4.0 cr)
• ANSC 3307 - Artificial Insemination Techniques (1.0 cr)
• ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
• ANSC 3509 - Animal Biotechnology [BIOL, TS] (4.0 cr)
• ANSC 3511 - Animal Growth and Development (3.0 cr)
• ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
• ANSC 3801 - Livestock Merchandising (3.0 cr)
• ANSC 4011 - Dairy Cattle Genetics (3.0 cr)
• ANSC 4092 - Special Problems in Animal Science (1.0 - 4.0 cr)
• ANSC 4099 - Special Workshop in Animal Science (1.0 - 4.0 cr)
• ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
• ANSC 4401 - Swine Nutrition (3.0 cr)
• ANSC 4403 - Ruminant Nutrition of Production & Exotic Animals (3.0 cr)
• ANSC 4404 - Applied Dairy Nutrition (2.0 cr)
• ANSC 4601 - Pork Production Systems Management (4.0 cr)
• ANSC 4602 - Sheep Production Systems Management (4.0 cr)
• ANSC 4603 - Beef Production Systems Management (4.0 cr)
• ANSC 4604 - Dairy Production Systems Management (4.0 cr)
• ANSC 4613 - Advanced Beef Production Systems Management (2.0 cr)
• ANSC 4614 - Advanced Dairy Production Systems Management (4.0 cr)
• APEC 1251 - Principles of Accounting (3.0 cr)
• APEC 3411 - Commodity Marketing (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)
• APEC 3811 - Principles of Farm Management (3.0 cr)
• CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
• FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
• FSCN 2021 - Introductory Microbiology (4.0 cr)
• GCD 3022 - Genetics (3.0 cr)
Pre-Vet/Science
Pre-veterinarian students should/must account for the course requirements of the respective College of Veterinary Medicine Schools they hope to apply to when choosing other electives.

Pre-Vet/Science Core Courses
Chemistry
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)

Chemistry for the Life Sciences
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)

Take 7 or more credit(s) from the following:
• CHEM 2311 - Organic Lab (4.0 cr)
• GCD 3022 - Genetics (3.0 cr)
• PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
• PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
• PHYS 1107 - Introductory Physics Online I [PHYS] (4.0 cr)
• PHYS 1108 - Introductory Physics Online II [PHYS] (4.0 cr)
• VBS 2032 - General Microbiology With Laboratory (5.0 cr)

Animal Science Electives
Courses cannot fulfill two areas unless they are also a liberal education requirement.
Take 12 or more credit(s) from the following:
• AECM 2051 - Current Technical Competencies (4.0 cr)
• AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
• ANSC 1011 - Animals and Society [CIV] (3.0 cr)
• ANSC 1201 - Backyard Chickens - Science and Practice (3.0 cr)
• ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
• ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
• ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
• ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
• ANSC 2015 - Animal Welfare Science and Ethics (3.0 cr)
• ANSC 2016 - Introduction to Applied Animal Behavior (3.0 cr)
• ANSC 2055 - Horse Management (2.0 cr)
• ANSC 2056 - Horse Management Practicum (2.0 cr)
• ANSC 3007 - Equine Nutrition (3.0 cr)
• ANSC 3015 - Animal Welfare Judging and Assessment (3.0 cr)
• ANSC 3305 - Reproductive Biology in Health and Disease (4.0 cr)
• ANSC 3307 - Artificial Insemination Techniques (1.0 cr)
• ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
• ANSC 3509 - Animal Biotechnology [BIOL, TS] (4.0 cr)
• ANSC 3511 - Animal Growth and Development (3.0 cr)
• ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
• ANSC 3801 - Livestock Merchandising (3.0 cr)
• ANSC 4011 - Dairy Cattle Genetics (3.0 cr)
• ANSC 4092 - Special Problems in Animal Science (1.0 - 4.0 cr)
• ANSC 4099 - Special Workshop in Animal Science (1.0 - 4.0 cr)
• ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
• ANSC 4401 - Swine Nutrition (3.0 cr)
• ANSC 4403 - Ruminant Nutrition of Production & Exotic Animals (3.0 cr)
• ANSC 4404 - Applied Dairy Nutrition (2.0 cr)
• ANSC 4601 - Pork Production Systems Management (4.0 cr)
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• ANSC 4604 - Dairy Production Systems Management (4.0 cr)
• ANSC 4613 - Advanced Beef Production Systems Management (2.0 cr)
• ANSC 4614 - Advanced Dairy Production Systems Management (4.0 cr)
• APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
• APEC 1251 - Principles of Accounting (3.0 cr)
• APEC 3411 - Commodity Marketing (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)
• APEC 3811 - Principles of Farm Management (3.0 cr)
• CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
• FSCN 2021 - Introductory Microbiology (4.0 cr)
• GCD 3022 - Genetics (3.0 cr)
• SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
• VBS 2032 - General Microbiology With Laboratory (5.0 cr)
• VBS 2100 - Companion Animal Anatomy (3.0 cr)
• VCS 4606 - Small Animal Management (3.0 cr)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
  or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• Midwest Poultry Consortium Summer Courses - Madison, WI
• Any CFANS Major Study/Learning Abroad Course
Twin Cities Campus

Animal Science Minor

Animal Science

College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20

This minor is for students who want to include animal science coursework to enhance or supplement their major program. Students have flexibility in choosing courses to meet the requirements.

Program Delivery

This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses

At least 10 credits must be 3xxx or higher.
Take 20 or more credit(s) from the following:
Take at most 10 credit(s) from the following:
• ANSC 1xxx
• ANSC 2xxx
• Take 10 or more credit(s) from the following:
  • ANSC 3xxx
  • ANSC 4xxx
  • ANSC 5xxx
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
  or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• ANSC 5702 - Cell Physiology (4.0 cr)
  or PHSL 4702 - Cell Physiology (3.0 cr)
**Twin Cities Campus**

**Applied Economics B.S.**

**Applied Economics**

**College of Food, Agricultural and Natural Resource Sciences**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 54 to 57
- Degree: Bachelor of Science

The applied economics major is designed to give students a solid foundation in economics and in how it is applied in the real world to improve people’s lives. Core courses provide training in microeconomics, macroeconomics, and econometrics. Additional courses focus on environmental and resource economics, international and development economics, agricultural economics, and the economics of the public sector.

Students majoring in applied economics develop strong critical-thinking skills, data analysis proficiency, and the ability to communicate their ideas in writing. Our students have pursued careers in government and in the private sector using their BS degrees. Others have pursued professional or graduate training in economics, law, management, or public policy.

Students completing the applied economics major are not eligible to add a second major in agricultural food and business management due to course overlap.

Students majoring in agricultural and food business management and applied economics cannot minor in either of the department minors (AFBM or APEC). We highly encourage students to pursue a university-wide minor or, if they are in AFBM, one of the department-specific minors offered through CSOM.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](http://admissions.umn.edu).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](http://catalog.umn.edu/undergraduate/education/degrees/liberal_education_requirements). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students may not major in both applied economics and agricultural and food business management.

At least 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students considering graduate study in applied economics should take MATH 1271 and 1272 and are also encouraged to contact the graduate program (apocdgs@umn.edu) early in their college career, as additional preparation may be recommended.

**Mathematics and Statistics Prerequisites**

- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

**Applied Economics Core**

- APEC 1001 - Orientation to Applied Economics (1.0 cr)
- or CFAN 3201 - Career and Internship Preparation (1.0 cr)
- or ICP 3201 - Career and Internship Preparation (1.0 cr)
- APEC 1201 - Applications of Excel in Economics and Management (1.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>APEC 1101</td>
<td>Principles of Microeconomics [SOCS, GP]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or APEC 1101H</td>
<td>Principles of Microeconomics [SOCS, GP]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or ECON 1101</td>
<td>Principles of Microeconomics [SOCS, GP]</td>
<td>4.0 cr</td>
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<tr>
<td>APEC 1102</td>
<td>Principles of Macroeconomics</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or APEC 1102H</td>
<td>Principal of Macroeconomics</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or ECON 1102</td>
<td>Principles of Macroeconomics: Consumers, Producers, and Markets</td>
<td>4.0 cr</td>
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<tr>
<td>APEC 3001</td>
<td>Applied Microeconomics: Consumers, Producers, and Markets</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>APEC 3002</td>
<td>Managerial Economics</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or APEC 3003</td>
<td>Introduction to Applied Econometrics</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>APEC 3006</td>
<td>Applied Macroeconomics: Government and the Economy</td>
<td>3.0 cr</td>
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**Communication Core**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>AECM 2421W</td>
<td>Professional and Oral Communication for Agriculture, Food &amp; the Environment [WI]</td>
<td>3.0 cr</td>
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<tr>
<td>or COMM 1101</td>
<td>Introduction to Public Speaking [CIV]</td>
<td>3.0 cr</td>
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<tr>
<td>WRIT 3562W</td>
<td>Technical and Professional Writing [WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>AECM 3431</td>
<td>Communicating Food, Agriculture &amp; Environmental Science to the Public</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or COMM 5441</td>
<td>Communication in Human Organizations</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or COMM 3422</td>
<td>Interviewing and Communication</td>
<td>3.0 cr</td>
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<tr>
<td>or WRIT 3029W</td>
<td>Business and Professional Writing [WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or WRIT 3441</td>
<td>Editing, Critique, and Style</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or WRIT 3257</td>
<td>Technical and Professional Presentations</td>
<td>3.0 cr</td>
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</tbody>
</table>

**Experiential Learning**

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AECM 3096</td>
<td>Experiential Learning: Production and Business</td>
<td>1.0 - 3.0 cr</td>
</tr>
<tr>
<td>or AECM 4011</td>
<td>Applied Agribusiness Marketing Strategies</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>or CFAN 2096</td>
<td>Reflecting on Your Professional Experience</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>or CFAN 3096</td>
<td>Making the Most of your Professional Experience</td>
<td>1.0 cr</td>
</tr>
</tbody>
</table>

**Interdisciplinary Learning**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>APEC 3202</td>
<td>An Introduction to the Food System: Analysis, Management and Design</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or ESPM 1011</td>
<td>Issues in the Environment [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or FSCN 1102</td>
<td>Food: Safety, Risks, and Technology [CIV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GCC 3017</td>
<td>World Food Problems: Agronomics, Economics and Hunger [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GCC 5008</td>
<td>Policy and Science of Global Environmental Change [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or ANSC 3203W</td>
<td>Environment, Global Food Production, and the Citizen [GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or AGRO 3203W</td>
<td>Environment, Global Food Production, and the Citizen [GP, WI]</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- WRIT 3029W - Business and Professional Writing [WI] 3.0 cr
- WRIT 3562W - Technical and Professional Writing [WI] 4.0 cr
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] 3.0 cr
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] 3.0 cr

**Professional Application Cluster**

This is additional coursework above that taken for the Applied Economics Core.

Take 12 or more credit(s) from the following:
- APEC 3xxx
- APEC 4xxx
- APEC 5xxx
Twin Cities Campus
Applied Economics Minor

Applied Economics
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 20

Applied economics involves the application of economic theory and empirical methods to examine a wide range of topics in different areas of economics, such as agricultural economics, economic education, development economics, economic growth, labor economics, and public economics. It also seeks to explain the impacts of public policies in these areas.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
To receive a minor, students must complete Principles of Microeconomics and Principles of Macroeconomics, plus 9 credits from elective courses at the 3000 level or higher. No more than 6 credits may be counted for both a major and the applied economics minor.

Minor Courses
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
APEC 1102 - Principles of Macroeconomics (3.0 cr)
  or APEC 1102H [Inactive] (4.0 cr)
  or ECON 1102 - Principles of Macroeconomics (4.0 cr)

Take 9 or more credit(s) from the following:
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- APEC 3002 - Managerial Economics (4.0 cr)
- APEC 3003 - Introduction to Applied Econometrics (4.0 cr)
- APEC 3004 - Management Science Workshop (2.0 cr)
- APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3071 - Microeconomics of International Development (3.0 cr)
- APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- APEC 3993 - Directed Study in Applied Economics (1.0 - 4.0 cr)
- APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
- APEC 5321 - Regional Economic Analysis (3.0 cr)
- APEC 5511 - Labor Economics (3.0 cr)
- APEC 5711 - Agricultural and Environmental Policy (3.0 cr)
- APEC 5721 - Economics of Science and Technology Policy (3.0 cr)
- APEC 5731 - Economic Growth and International Development (3.0 cr)
- APEC 5751 - Global Trade and Policy (3.0 cr)
- GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
- APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
  or AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
Twin Cities Campus
Bioproducts Engineering Minor
Bioproducts and Biosystems Engineering
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 14

This program provides students with a strong background in the basic sciences and engineering and their application to manufacturing and end-use applications of materials, chemicals, and energy from renewable resources.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
Take 14 or more credit(s) from the following:
• BBE 4302 - Biodegradation of Bioproducts (3.0 cr)
• BBE 4303 - Introduction to Bio-based Materials Science (3.0 cr)
• BBE 4305 - Pulp and Paper Technology (3.0 cr)
• BBE 4401 - Bioproducts Separation and Purification Processes (3.0 cr)
• BBE 4402 - Bio-based Products Engineering Lab II (2.0 cr)
• BBE 4403 - Bio-based Products Engineering Lab I (2.0 cr)
• BBE 4404 - Biopolymers and Biocomposites Engineering (3.0 cr)
• BBE 4502W - BBE Capstone Design [WI] (4.0 cr)
• BBE 4713 - Biological Process Engineering (3.0 cr)
• BBE 4723 - Food Process Engineering (3.0 cr)
• BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
  or CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
• BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
  or CHEM 4301 - Applied Surface and Colloid Science (3.0 cr)
Twin Cities Campus

Climatology Minor

Soil, Water, & Climate

College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20 to 21

The minor allows students to broaden their expertise in weather and climate studies. Students who will be working for any industry or agency that depends on understanding weather and climate change will find the minor useful. Students take a required course in meteorology and the atmosphere. Electives are in climate variations and change, atmospheric composition and air pollution, biometeorology, and global environmental change. Students must complete at least 20 credits to complete the minor.

Program Delivery

This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses

ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)

Electives

Take 16 or more credit(s) from the following:
•ESPM 3131 - Environmental Physics (3.0 cr)
•ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
•ESPM 3777 - Climate Change - Physics, Myths, Mysteries, and Uncertainties (3.0 cr)
•ESPM 5402 - Biometeorology (3.0 cr)
•LAAS 5425 - Atmospheric Processes I: Thermodynamics and Dynamics of the Atmosphere (3.0 cr)
•LAAS 5426 - Atmospheric Processes II: Radiation, Composition, and Climate (3.0 cr)
•GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
•GEOG 3423 - Urban Climatology (3.0 cr)
•GEOG 5426 - Climatic Variations (3.0 cr)
•ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
•ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
•ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
•PUBH 6154 - Climate Change and Global Health (3.0 cr)
Twin Cities Campus
Corporate Environmental Management Minor
Bioproducts and Biosystems Engineering
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 32

The Corporate Environmental Management (CEM) minor is designed to provide students with an excellent opportunity to gain broad exposure to the strategic, analytical, and managerial processes associated with the environmental impact of companies' and other organizations' products and processes. Completion of the CEM minor enhances students' preparation for graduate school, and for entering a career in the growing corporate functions of environmental management and regulatory compliance.

The CEM minor is available to students in good standing in all majors at the University of Minnesota, Twin Cities.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 4 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Courses
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or any first semester calculus
or AP calculus
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)

Minor Requirements
Minor Courses
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
Take 6 or more credit(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
• ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
• ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• ESPM 4607 - Industrial Biotechnology and the Environment (3.0 cr)
• BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
• SSM 2003 - Systems Thinking: Development and Applications in Sustainability (3.0 cr)
• SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
• SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
Twin Cities Campus
Environmental Sciences, Policy and Management B.S.
College of Food, Agri & Natural Resource Sciences
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 92
- This program requires summer terms.
- Degree: Bachelor of Science

The environmental sciences, policy and management (ESPM) major is designed to address the needs posed by the complexity of environmental and renewable resource issues that are faced on a state, national, and global level. This interdisciplinary, environmental major prepares graduates to solve environmental problems from an integrated knowledge base.

The mission of the ESPM major is to:
- Improve the basis for environmental decision-making by integrating physical, biological, and social sciences with policy analysis and management;
- Educate the next generation of environmental professionals and leaders;
- Foster innovative approaches for the education of environmental professionals;
- Facilitate science/social science/policy linkages within and beyond the University.

Students complete a set of common "integrated core" courses that focus on integrated problem-solving using environmental sciences, policy, ethics, management models, and communication theory. Students also incorporate classroom and fieldwork.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All students complete required courses below and choose one of the following ESPM tracks:
- conservation and resource management (CRM)
- environmental education and communication (EEC)
- policy, planning, law, and society (PPLS)
- environmental science (ES)

Students are strongly encouraged to have an international experience before graduation. Courses completed during an international experience (study, work, volunteer, research) can meet program requirements, liberal education requirements, and/or electives. Discussion with an advisor prior to commencing an international experience is required to plan how courses meet requirements in the ESPM major.

At least 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Integrated ESPM Core
- ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
- ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
- ESPM 3000 - Seminar on Current Issues for ESPM (1.0 cr)
- ESPM 1001 - Freshmen Orientation to Environmental Sciences, Policy, and Management (1.0 cr)
  or ESPM 1002 - Transfer Orientation Seminar (1.0 cr)
Experiential and Interdisciplinary Learning

ESPM Capstone
Take exactly 1 course(s) from the following:
- ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
- ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
- ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)

Communication Skills
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)

Biological Sciences
CRM track: BIOL 1009 is required when taking BIOC 2011
BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Conservation and Resource Management
Students in the CRM sub-plan are involved in what Thoreau suggested was “environmental wisdom,” or the ability to make effective decisions about the environment by synthesizing natural and human created facts and information. Students integrate this understanding with diverse economic and social insight to make effective decisions for the environment and society.

This sub-plan prepares students for technical support, operational, and managerial positions in diverse aspects of resource conservation and management with local, state, and federal agencies and the private sector. This sub-plan also prepares students for graduate study in a wide range of areas.

Students solve problems in field settings and communicate their understanding, synthesis, and decision-making to diverse audiences. They gain experience in the actual implementation of decisions. Students may also develop special skills through electives (e.g., geographic information systems, geospatial analysis).

CRM Core Courses
Additional Mathematical Thinking
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)

Statistics
ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Additional Biological Thinking
PMB 2022 - General Botany (3.0 cr)
or BIOL 2012 - General Zoology (4.0 cr)
or ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
or ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
or FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
or FNRM 3104 - Forest Ecology (4.0 cr)

Soils
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Additional Physical Science
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOSC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
BIOSC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)

GIS
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
or GEOG 3561 - Principles of Geographic Information Science (4.0 cr)

Additional Geospatial/Resource Analysis
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
• ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
• ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
• FNRM 3218 - Measuring and Modeling Forests (3.0 cr)
• SOIL 4511 - Field Study of Soils (2.0 cr)

Social Sciences
Economics
ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Policy
ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
or ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)

Additional Social Systems
ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
or ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
or ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
or ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
or ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
or ESPM 4242 - Methods for Environmental and Natural Resource Policy Analysis (3.0 cr)

Field Experience
Take 1 or more course(s) totaling 2 or more credit(s) including 0 or more sub-requirements(s) from the following:
• ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
• ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• SOIL 4511 - Field Study of Soils (2.0 cr)
• FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)
• FNRM 3362 - Drones: Data, Analysis, and Operations (3.0 cr)
• FNRM 2101 - Identifying Forest Plants (1.0 cr)
• FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
• FNRM 2104 - Measuring Forest Resources (1.0 cr)

Internship
Requires advance approval by ESPM Internship Coordinator. See academic advisor and ESPM website to determine which course to take.
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)

CRM Contract Courses
Courses taken to meet other ESPM requirements cannot be counted here. A contract, signed by your faculty mentor, is required. All courses must be upper division. Sample courses are listed below; consult with faculty mentor about courses not on this list.
Take 23 or more credit(s) from the following:

Conservation and Management
Take 0 or more course(s) from the following:
• ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
• ESPM 3575 - Wetlands (3.0 cr)
• ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
• ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
• ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
• ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
• ESPM 3921 - Science and Critical Thinking for Understanding Our World [CIV] (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• ESPM 4216 - Contaminant Hydrology (3.0 cr)
• ESPM 4601 - Environmental Pollution (3.0 cr)
• BBE 4535 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BBE 4608</td>
<td>Environmental and Industrial Microbiology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EEB 3603</td>
<td>Science, Protection, and Management of Aquatic Environments</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>ENT 3925</td>
<td>Insects, Aquatic Habitats, and Pollution</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>ENT 4251</td>
<td>Forest and Shade Tree Entomology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3104</td>
<td>Forest Ecology</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>FNRM 3114</td>
<td>Hydrology and Watershed Management</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3411</td>
<td>Managing Forest Ecosystems: Silviculture</td>
<td>3.0 cr</td>
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<tr>
<td>FNRM 3462</td>
<td>Advanced Remote Sensing and Geospatial Analysis</td>
<td>3.0 cr</td>
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<tr>
<td>FNRM 5153</td>
<td>Forest Hydrology &amp; Watershed Biogeochemistry</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FW 4102</td>
<td>Principles of Conservation Biology [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FW 4103</td>
<td>Principles of Wildlife Management</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOIL 3416</td>
<td>Plant Nutrients in the Environment</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SSM 4504W</td>
<td>Sustainable Products Systems Management [WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>ENGL 3501</td>
<td>Public Discourse: Coming to Terms with the Environment [LITR, ENV]</td>
<td>3.0 cr</td>
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<tr>
<td>HSCI 3244</td>
<td>Nature's History: Science, Humans, and the Environment [HIS, ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>Writt 315</td>
<td>Writing on Issues of Land and the Environment [AH, DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>ESPM 5071</td>
<td>Ecological Restoration</td>
<td>4.0 cr</td>
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<tr>
<td>or HORT 5071</td>
<td>Ecological Restoration</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>SOIL 5555</td>
<td>Wetland Soils</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or ESPM 5555</td>
<td>Wetland Soils</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>

**Geospatial/Resource Analysis**

Take 0 or more course(s) from the following:
- ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
- ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
- ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
- FNRM 3218 - Measuring and Modeling Forests (3.0 cr)
- FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)

**Grand Challenge Courses**

Take 0 or more course(s) from the following:
- GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
- GCC 3011 - Pathways to Renewable Energy [TS] (3.0 cr)
- GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- GCC 5011 - Pathways to Renewable Energy [TS] (3.0 cr)

**Environmental Education & Communication**

Students in the EEC sub-plan gain a solid base of knowledge in the environmental sciences, environmental ethics, and the social context of environmental issues, and they develop a practical set of skills for teaching effectively in informal settings and for communicating clearly in written, oral, and electronic forms. This sub-plan prepares students to work at government agencies, nature centers, parks, non-governmental organizations, and similar institutions, and is appropriate for students who wish to gain a broad understanding of environmental issues and the choices humans can make to mitigate unwanted impacts of human behavior on the environment.

Students are encouraged to study abroad in ESPM topics, and/or a student designed area making choices that strengthen their expertise in an area and/or provide comparative understanding from another culture or discipline. Students should see their advisor for a list of suggestions and recommended minors.

**Mathematical Thinking**

- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or SOC 3811 - Social Statistics [MATH] (4.0 cr)
- or ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)

**Physical Science**

- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

**Social Sciences**

- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- or ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)

**Education and Communication**

Take 12 or more credit(s) from the following:
- ESPM 2401 - Environmental Education/Interpretation (3.0 cr)
• ESMTP 4811 - Environmental Interpretation (3.0 cr)
• AECM 3431 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)
• COMM 3401 - Introduction to Communication Theory (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 4251 - Environmental Communication [ENV] (3.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
• WRIT 3102W - Public Writing [CIV, WI] (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
• WRIT 3221W - Communication Modes and Methods [WI] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• WRIT 4341 - Editing, Critique, and Style (3.0 cr)
• WRIT 3701W - Rhetorical Theory for Writing Studies [WI] (3.0 cr)

Take exactly 1 course(s) from the following:
• EPSY 5243 - Principles and Methods of Evaluation (3.0 cr)
• OLPD 5501 - Principles and Methods of Evaluation (3.0 cr)

• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• OLPD 5501 - Principles and Methods of Evaluation (3.0 cr)
• FNRM 5259 - Visitor Behavior Analysis (3.0 cr)

Human Dimensions

ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
or
PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)

Take 2 or more course(s) from the following:
• ESMTP 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
• ESMTP 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESMTP 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GSCI 3376 - Political Ecology of North America [ENV] (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or
SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• CSCL 3322 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)

Natural Sciences

Ecology

FNRM 3104 - Forest Ecology (4.0 cr)
or EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (4.0 cr)
or EEB 3001 - Ecology and Society [ENV] (3.0 cr)
or FW 2003 - Introduction to Marine Biology (3.0 cr)

Physical Environment

ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
or BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
or EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
or EEB 5601 - Limnology (3.0 cr)
or FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
or ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
or PHY 1001W - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)
or SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Organismal Biology

Take 3 or more course(s) including exactly 2 sub-requirements(s) from the following:

Take 1 or more course(s) from the following:
• FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
• PMB 2022 - General Botany (3.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)

Animal

Take 1 or more course(s) from the following:
• BIOL 2012 - General Zoology (4.0 cr)
• EEB 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• ENT 1005 - Insect Biology with Lab [BIOL] (4.0 cr)
• ENT 5361 - Aquatic Insects (4.0 cr)
• FW 4101 - Herpetology (4.0 cr)
•FW 4136 - Ichthyology (4.0 cr)

Complex Human and Natural Systems
ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
or ESPM 5071 - Ecological Restoration (4.0 cr)
or FNRM 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
or GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
or HORT 5071 - Ecological Restoration (4.0 cr)
or LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
or URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)

Field Experience or Internship
Take from below or other similar field coursework
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
or FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)
or FNRM 2101 - Identifying Forest Plants (1.0 cr)
FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
FNRM 2104 - Measuring Forest Resources (1.0 cr)

Environmental Science
The ES sub-plan focuses on the application and integration of basic and applied sciences to solve complex environmental problems. Students can earn professional licenses and certification in several areas and will be qualified to work as soil scientists, hydrologists, water quality and wetland ecology scientists, environmental remediation scientists, climatologists, and atmospheric scientists. Graduates find jobs with environmental regulatory agencies, private consulting firms, and nonprofit organizations. This sub-plan provides a diverse basic and applied science background that also prepares students for scientific research through advanced graduate studies.

Students in this sub-plan use an understanding of biology, chemistry, physics, and mathematics to develop a broad knowledge base in soil, hydrologic, atmospheric, and biological sciences. Students study the interaction between science and the functioning of urban, forested, and agricultural lands, as well as hydrologic, atmospheric, soil, and wetland resources.

Social Sciences
ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
or ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)

Additional Basic Science and Math Courses
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
ESPM 3131 - Environmental Physics (3.0 cr)
or ESPM 3777 - Climate Change: Physics, Myths, Mysteries, and Uncertainties (3.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or BIOL 2012 - General Zoology (4.0 cr)
or PMB 2022 - General Botany (3.0 cr)
ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Applied Sciences and Technology Courses
FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
or GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
or FNRM 3104 - Forest Ecology (4.0 cr)
or FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
or EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (4.0 cr)
Take 2 or more credits from the following:
  - ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
  - ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
  - ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
  - CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
  - FNM 3206 - Park and Protected Area Management Field Studies (2.0 cr)
  - PBM 4321 - Minnesota Flora (3.0 cr)
  - SOIL 3521 - Soil Judging (1.0 cr)
  - SOIL 4511 - Field Study of Soils (2.0 cr)
  - FNM 3362 - Drones: Data, Analysis, and Operations (3.0 cr)
  - FNM 2101 - Identifying Forest Plants (1.0 cr)
  - FNM 2102 - Northern Forests Field Ecology (2.0 cr)
  - FNM 2104 - Measuring Forest Resources (1.0 cr)

ES Contract Courses
Based on course selection, students have the opportunity to become certified or licensed as a professional soil scientist, hydrologist, wetland delineator, erosion control specialist, or site evaluator for individual sewage treatment system. Courses taken to meet other requirements cannot be counted here, nor can courses count for multiple groups. A contract, signed by your faculty mentor, is required. All courses must be upper division. Sample courses are listed below.
Take 9 or more credit(s) from the following:

**Earth Sciences**
Take 0 or more course(s) from the following:
  - ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
  - ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
  - LAAS 5515 - Soil Formation: Earth Surface Processes and Biogeochemistry (3.0 cr)
  - SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
  - SOIL 3521 - Soil Judging (1.0 cr)
  - SOIL 4511 - Field Study of Soils (2.0 cr)
  - ESCI 4703 - Glacial Geology (4.0 cr)
  - WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
  - SOIL 5555 - Wetland Soils (3.0 cr)
  - or ESPM 5555 - Wetland Soils (3.0 cr)

**Water Sciences**
Take 0 or more course(s) from the following:
  - ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
  - ESPM 4216 - Contaminant Hydrology (3.0 cr)
  - EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
  - EEB 5605 - Limnology Laboratory (2.0 cr)
  - FNM 5163 - Forest Hydrology & Watershed Biogeochemistry (3.0 cr)
  - PUBH 6190 - Environmental Chemistry (3.0 cr)
  - WRS 5101 - Water Policy (3.0 cr)

**Biological and Ecological Sciences**
Take 0 or more course(s) from the following:
  - ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
  - ESPM 3921 - Science and Critical Thinking for Understanding Our World [CIV] (3.0 cr)
  - ESPM 5402 - Bioclimatology (3.0 cr)
  - AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
  - AGRO 5321 - Ecology of Agricultural Systems (3.0 cr)
  - EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
  - EEB 4611 - Biogeochemical Processes (3.0 cr)
  - ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
  - ENT 5361 - Aquatic Insects (4.0 cr)
  - FNM 3104 - Forest Ecology (4.0 cr)
  - FNM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
  - FNM 3204 - Landscape Ecology and Management (3.0 cr)
  - FNM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
  - GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
  - HIST 3417W - Food in History [HIS, ENV, WI] (3.0 cr)
  - HORT 5071 - Ecological Restoration (4.0 cr)
  - LA 3204 - Holistic Landscape Ecology and Bioregional Practice (3.0 cr)
  - PMB 3002 - Plant Biology: Function (2.0 cr)
  - PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
  - PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
  - PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
  - AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

• Take 0 or more course(s) from the following:

**Ecology**
- EEB 3407 - Ecology (3.0 cr)
- or EEB 3408W - Ecology [WI] (4.0 cr)

**Atmospheric Sciences**
Take 0 or more course(s) from the following:
- ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
- ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
- ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
- ESPM 3777 - Climate Change - Physics, Myths, Mysteries, and Uncertainties (3.0 cr)
- ESPM 3993 - Directed Study (1.0 - 4.0 cr)
- ESPM 5402 - Biometeorology (3.0 cr)
- LAAS 5425 - Atmospheric Processes I: Thermodynamics and Dynamics of the Atmosphere (3.0 cr)
- LAAS 5426 - Atmospheric Processes II: Radiation, Composition, and Climate (3.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 5426 - Climatic Variations (3.0 cr)
- PUBH 6154 - Climate Change and Global Health (3.0 cr)

**Environmental Analysis and Assessment**
Take 0 or more course(s) from the following:
- ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
- ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
- ESPM 4216 - Contaminant Hydrology (3.0 cr)
- ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
- ESPM 4601 - Environmental Pollution (3.0 cr)
- ESPM 5601 - Principles of Waste Management (3.0 cr)
- CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- FNRM 3218 - Measuring and Modeling Forests (3.0 cr)
- FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
- FNRM 3462 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3533 - Advanced Geographic Information Science (3.0 cr)
- GIS 5571 - ArcGIS I (3.0 cr)
- PUBH 6152 - Air, Water, and Health (2.0 cr)
- PUBH 6175 - Environmental Measurements Laboratory (2.0 cr)

**Grand Challenge Courses**
Take 0 or more course(s) from the following:
- GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
- GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
- GCC 3011 - Pathways to Renewable Energy [TS] (3.0 cr)
- GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- GCC 5031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
- GCC 5011 - Pathways to Renewable Energy [TS] (3.0 cr)

**Policy, Planning, Law and Society**
The PPLS sub-plan focuses on developing understanding and problem-solving skills germane to the interaction between human and natural systems. Students will be well-prepared for policy development and analysis, strategy development, and decision-making in a range of positions and institutional settings. Example positions include those as a policy analyst, community planner, social researcher, or lawyer in public agencies, with legislative bodies, consulting firms, and conservation organizations. This sub-plan also prepares students for graduate study in policy, planning, and law programs.

Students study concepts, issues, and problem-solving approaches that address the policy, legal, economic, political, planning, and sociological aspects of environment and natural resource management. This study includes ethics and conflict management. The sub-plan further emphasizes an interdisciplinary approach for examining problems, such as sustainable land use planning, resource conservation and management, law, and environmental protection at a range of political levels and spatial scales and developing effective and innovative solutions. Students develop skill in integrating knowledge from the physical, biological, and social sciences to develop policy and planning alternatives and appropriate strategies to provide real solutions to complex problems.

**Physical Science**
**Introductory Chemistry**
- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
or **Chemistry Principles**
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

**Mathematical Thinking**
- ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)

**PPLS Core Courses**
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
- ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)

**Policy and Planning**
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
- ESPM 4242 - Methods for Environmental and Natural Resource Policy Analysis (3.0 cr)
- ESPM 4256 - Natural Resource Law and the Management of Public Lands and Waters (3.0 cr)

**International Development**
- ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
  or Appropriate Study Abroad

**Field Session Options**
- ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
  or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
- FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)

**or Cloquet Field Session**
- Summer
  - FNRM 2101 - Identifying Forest Plants (1.0 cr)
  - FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
  - FNRM 2104 - Measuring Forest Resources (1.0 cr)

**Methods**
Choose one course from the following.
- ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
  or POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
  or PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
- FNRM 5259 - Visitor Behavior Analysis (3.0 cr)

**Geospatial Resource Analysis**
Take exactly one course from the following:
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
  or GEOG 3561 - Principles of Geographic Information Science (4.0 cr)

**Ecology and Management**
Choose 3 credits from the following.
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
  or ESPM 3575 - Wetlands (3.0 cr)
  or FNRM 3104 - Forest Ecology (4.0 cr)
  or FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)

**Environmental and Systems Management**
Choose 6-8 credits from the following.
- BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
  or ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
  or ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
  or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
  or ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
  or FNRM 3101 - Park and Protected Area Tourism (3.0 cr)
  or FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
  or FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
  or GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
  or SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

**PPLS Contract Courses**
Students must specialize in a content area to strengthen their expertise. This can be done with a minor, appropriate study abroad experience, and/or a student designed area. Courses listed in the sub-plan but not taken are good choices for use in a content area. Students should consult their faculty mentor for appropriate minors. A contract for 12 credits, signed by your faculty mentor, is required. All courses must be 3xxx level or above except for one course which could be 1xxx or 2xxx level.
Twin Cities Campus
Environmental Sciences, Policy and Management Minor
College of Food, Agri & Natural Resource Sciences
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 20

The environmental sciences, policy and management minor provides students in programs such as biology, education, journalism, political science, and others with the basic understanding to recognize, evaluate, and develop solutions to a range of environmental problems. Students interested in the minor should contact Student Services in 190 Coffey Hall.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
A minimum of two courses in the minor MUST have an ESPM designator.

Minor Core
Take 2 or more course(s) totaling 6 - 8 credit(s) from the following:
- ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
- ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
- FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
  or EEB 3407 - Ecology (3.0 cr)
  or EEB 3408W - Ecology [WI] (4.0 cr)
  or FNRM 3104 - Forest Ecology (4.0 cr)

Electives
You are encouraged, but not required, to choose a theme for your ESPM minor (e.g. communication, forestry, GIS/Remote Sensing, policy, soils, etc.), and to take elective courses that relate to that theme.
Take 10 or more credit(s) from the following:
- ESPM 2401 - Environmental Education/Interpretation (3.0 cr)
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
- ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
- ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
- ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
- ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
- ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
- ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
- ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
- ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
- ESPM 4216 - Contaminant Hydrology (3.0 cr)
- ESPM 4256 - Natural Resource Law and the Management of Public Lands and Waters (3.0 cr)
- ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
- ESPM 4601 - Environmental Pollution (3.0 cr)
- ESPM 4607 - Industrial Biotechnology and the Environment (3.0 cr)
- ESPM 4811 - Environmental Interpretation (3.0 cr)
- ESPM 5601 - Principles of Waste Management (3.0 cr)
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<th>Credits</th>
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<td>Renewable Energy and the Environment [TS]</td>
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<td>BBE 4608</td>
<td>Environmental and Industrial Microbiology</td>
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<td>CI 5537</td>
<td>Principles of Environmental Education</td>
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<td>CI 5747</td>
<td>Global and Environmental Education: Content and Practice</td>
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<td>EEB 3603</td>
<td>Science, Protection, and Management of Aquatic Environments</td>
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<td>FNRM 1101</td>
<td>Dendrology: Identifying Forest Trees and Shrubs</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3114</td>
<td>Hydrology and Watershed Management</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3131</td>
<td>Geographical Information Systems (GIS) for Natural Resources</td>
<td>4.0 cr</td>
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<tr>
<td>FNRM 3203</td>
<td>Forest Fire and Disturbance Ecology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3204</td>
<td>Landscape Ecology and Management</td>
<td>3.0 cr</td>
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<tr>
<td>FNRM 3218</td>
<td>Measuring and Modeling Forests</td>
<td>3.0 cr</td>
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<tr>
<td>FNRM 3262</td>
<td>Remote Sensing and Geospatial Analysis of Natural Resources and Environment</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3362</td>
<td>Drones: Data, Analysis, and Operations</td>
<td>3.0 cr</td>
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<tr>
<td>FNRM 3462</td>
<td>Advanced Remote Sensing and Geospatial Analysis</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FW 4102</td>
<td>Principles of Conservation Biology [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FNRM 3411</td>
<td>Managing Forest Ecosystems: Silviculture</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>HSCI 3244</td>
<td>Nature's History: Science, Humans, and the Environment [HIS, ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>PMB 4321</td>
<td>Minnesota Flora</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>PMB 4511</td>
<td>Flowering Plant Diversity</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>PHIL 3301</td>
<td>Environmental Ethics [ENV]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>REC 4301</td>
<td>Wilderness and Adventure Education</td>
<td>4.0 cr</td>
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<tr>
<td>SUST 3003</td>
<td>Sustainable People, Sustainable Planet [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>GCC 5008</td>
<td>Policy and Science of Global Environmental Change [ENV]</td>
<td>3.0 cr</td>
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<tr>
<td>SOIL 5555</td>
<td>Wetland Soils</td>
<td>3.0 cr</td>
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<tr>
<td>or ESPM 5555</td>
<td>Wetland Soils (3.0 cr)</td>
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<tr>
<td>ESPM 3601</td>
<td>Sustainable Housing--Community, Environment, and Technology [TS]</td>
<td>3.0 cr</td>
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</tbody>
</table>
Twin Cities Campus
Fisheries, Wildlife, and Conservation Biology B.S.
Fisheries, Wildlife, and Conservation Biology
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 89
- This program requires summer terms.
- Degree: Bachelor of Science

The fisheries, wildlife, and conservation biology curriculum gives students a broad science background emphasizing biological and environmental sciences and other coursework needed for careers in fisheries, wildlife, conservation biology, and other natural resource and environmental fields. Graduates are prepared to research, plan, and implement the management, protection, and enhancement of fisheries and aquatic resources, wildlife resources, and biological diversity. Graduates find employment as fisheries and wildlife scientists and managers, naturalists, zoo biologists, environmental biologists, environmental educators, and other natural resource professionals. The program also provides students with the fundamental science background needed to enter a wide variety of graduate programs in biological and natural resource sciences, as well as professional programs in veterinary medicine, environmental law, and environmental education.

Students select an area of specialization, usually by the end of the sophomore year. Areas of specialization include conservation biology, fisheries and aquatic sciences, and wildlife.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 20 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may fulfill the minimum requirements for admission to the University's College of Veterinary Medicine and other colleges of veterinary medicine by completing a bachelor's degree in fisheries and wildlife within any of the three areas of specialization.

Mathematical Thinking
Take 1 or more course(s) from the following:
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)

Take 1 or more course(s) from the following:
- FW 4001 - Biometry (4.0 cr)
- ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)

Chemical and Biological Sciences
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
BIOL 1009 - General Biology [BIOL] (4.0 cr)
BIOL 2012 - General Zoology (4.0 cr)
FW 4301 - Conservation Genetics (3.0 cr)
    or GCD 3022 - Genetics (3.0 cr)
Take 1 or more course(s) from the following:
Fisheries, Wildlife, and Conservation Biology Courses

The Interdisciplinary Learning requirement is met with FW 2001W.

FW 1001 - Orientation in Fisheries, Wildlife, and Conservation Biology (1.0 cr)
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
FW 3104 - Skills for Field Techniques in Habitat Assessment, Research, and Conservation (2.0 cr)
FW 3106 - Vegetation Sampling for Habitat Assessments (1.0 cr)
FW 3108 - Field Methods in Research and Conservation of Vertebrate Populations (3.0 cr)

Experiential Learning - Professional Experience

All students must take either CFAN 3096 or ESPM 4096. Students have three options for fulfilling the professional experience required in these courses: an official internship, a supervised research experience of at least 100 hours (e.g., UROP), or a major capstone research project in a study abroad program. Study abroad option must be discussed and approved by the FWCB major coordinator. Research option must be discussed and approved by a FWCB faculty supervisor.

ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.

Conservation Biology

The conservation biology specialization is for students interested in careers dealing with a broad range of conservation issues in aquatic or terrestrial habitats. Positions typically focus on protection of endangered species and management for biodiversity. Careers as environmental educators or naturalists are also options.

All required courses in the specialization must be taken A-F and completed with a grade of at least C-.

Communications

Take 1 or more course(s) from the following:
• AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
• COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Policy, Human Behavior, and Planning

Take exactly 1 course(s) from the following:
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• FNRM 3101 - Park and Protected Area Tourism (3.0 cr)

Take exactly 2 course(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
• FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)
• ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
  or APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
  or GCC 5031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)

Organismal Biology
Take exactly 1 course(s) from the following:
- FW 4101 - Herpetology (4.0 cr)
- FW 2003 - Introduction to Marine Biology (3.0 cr)
- FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- ENT 5021 - Insect Biodiversity and Evolution (4.0 cr)
- ENT 5361 - Aquatic Insects (4.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
  or EEB 4839 - Field Studies in Mammalogy (4.0 cr)
- EEB 4844 - Field Ornithology (4.0 cr)
  or EEB 4134 - Introduction to Ornithology (4.0 cr)

Ecosystem Ecology
Take exactly 1 course(s) from the following:
- FNRM 3204 - Landscape Ecology and Management (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- EEB 5601 - Limnology (3.0 cr)
- FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
- GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)

Conservation Biology
All courses are required.
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
- FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
- PMB 2022 - General Botany (3.0 cr)
- FW 5051 - Analysis of Populations (4.0 cr)

Management and Restoration
Take exactly 1 course(s) from the following:
- ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
- ESPM 4601 - Environmental Pollution (3.0 cr)
- ESPM 5071 - Ecological Restoration (4.0 cr)
- FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- FW 4103 - Principles of Wildlife Management (3.0 cr)

Additional Course
Students must select at least one additional course from any of the following course groups: 2. Organismal Biology, 3. Ecosystem Ecology, or 4. Management and Restoration.
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- FW 4101 - Herpetology (4.0 cr)
- FW 2003 - Introduction to Marine Biology (3.0 cr)
- FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- ENT 5021 - Insect Biodiversity and Evolution (4.0 cr)
- ENT 5361 - Aquatic Insects (4.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- EEB 5601 - Limnology (3.0 cr)
- FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
- GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
- ESPM 4601 - Environmental Pollution (3.0 cr)
- ESPM 5071 - Ecological Restoration (4.0 cr)
- FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- FW 4103 - Principles of Wildlife Management (3.0 cr)

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Information current as of September 02, 2020
Fisheries and Aquatic Sciences
The fisheries and aquatic sciences area of specialization is for students who wish to pursue careers in fisheries and aquatic resource science, management and administration, fish hatchery management or aquaculture, aquatic education, and aquatic environmental assessment. The curriculum meets the education criteria for the Certified Fisheries Professional designation established by the American Fisheries Society, the major professional organization for fisheries scientists and managers in North America.

All required courses in the specialization must be taken A-F and completed with a grade of at least C-.

Communications
Take 1 or more course(s) from the following:
- AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Human Dimensions
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)

Fisheries and Aquatic Biology
Take 2 or more course(s) from the following:
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- FW 5459 - Stream and River Ecology (3.0 cr)
- FW 5051 - Analysis of Populations (4.0 cr)

Principles
FW 4136 - Ichthyology (4.0 cr)
 FW 4107 - Principles of Fisheries Science and Management (3.0 cr)
Take exactly 1 course(s) from the following:
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- EEB 5601 - Limnology (3.0 cr)
- FW 2003 - Introduction to Marine Biology (3.0 cr)

Other Biological Courses
Community and Ecosystem Ecology (FW 2003 can only be used to satisfy one requirement).
Take 1 or more course(s) from the following:
- FW 2003 - Introduction to Marine Biology (3.0 cr)
- FW 4101 - Herpetology (4.0 cr)
- ENT 5361 - Aquatic Insects (4.0 cr)
- ESPM 3015 - Invasive Plants and Animals: Ecology and Management (3.0 cr)

Physical Sciences
Depending on your course selection, you will need to take 3 or 4 courses to meet the minimum 11-credit requirement.
Option 1
Recommended for students interested in a graduate degree or planning a career focused on research.
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
 or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ESPM 3131 - Environmental Physics (3.0 cr)
- BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
 CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
 CHEM 2311 - Organic Lab (4.0 cr)

Option 2
Recommended for students planning on a career in professional or managerial fields such as the fisheries aspects of watershed management, applied fisheries management, or fisheries within the broader ecosystem. 11-13 cr.
PHYS 1001W - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)

Take 1 or more course(s) from the following:
- BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
- FNRM 3114 - Hydrology and Watershed Management (3.0 cr)

Wildlife

The wildlife specialization is for students who wish to pursue careers in wildlife science, management and administration, zoo biology, terrestrial ecology, environmental assessment, or education. With proper selection of electives, students can meet the education criteria for the Certified Wildlife Biologist designation established by the Wildlife Society, the major professional organization for wildlife scientists and managers in North America.

All required courses in the specialization must be taken A-F and completed with a grade of at least C-.

Communications
FW 4603 - Preparing Research Proposals for Wildlife Biologists (1.0 cr)

External Communications
Take 2 or more course(s) from the following:
- AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3221W - Communication Modes and Methods [WI] (3.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Human Dimensions
Take 2 or more course(s) from the following:
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
- FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)

Animals and Plants
PMB 2022 - General Botany (3.0 cr)

Take 2 or more course(s) from the following:
- FW 4101 - Herpetology (4.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
  or EEB 4839 - Field Studies in Mammalogy (4.0 cr)
- EEB 4134 - Introduction to Ornithology (4.0 cr)
  or EEB 4844 - Field Ornithology (4.0 cr)

Take 1 or more course(s) from the following:
- FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)

Community and Ecosystem Ecology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- FNRM 3104 - Forest Ecology (4.0 cr)
- FNRM 3204 - Landscape Ecology and Management (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
- ESPM 5071 - Ecological Restoration (4.0 cr)
  or HORT 5071 - Ecological Restoration (4.0 cr)

Wildlife
FW 4103 - Principles of Wildlife Management (3.0 cr)
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
FW 5051 - Analysis of Populations (4.0 cr)
FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)

Physical Sciences
Take 1 or more course(s)
PHYS 1001W - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)
  or PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)

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Information current as of September 02, 2020
or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)

Pre-Veterinary Medicine
This sub-plan is optional and does not fulfill the sub-plan requirement for this program.

The doctor of veterinary medicine degree (DVM) is a rigorous four-year professional program preceded by three to four years of pre-professional study. Although a bachelor's degree is not required for admission to the DVM program, approximately 70 percent of the students entering the program each year have completed their bachelor's degree. Fisheries and wildlife is one of the primary college majors at the University of Minnesota that offers a pre-veterinary program.

The following courses are required in addition to the fisheries and wildlife core requirements and courses in one of three areas of specialization. These courses may be substituted for the "suggested courses" in the areas of specialization.

Required Courses
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2311 - Organic Lab (4.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)
VBS 2032 - General Microbiology With Laboratory (5.0 cr)
or MICB 3301 - Biology of Microorganisms (5.0 cr)
or MICB 3303 - Biology of Microorganisms (3.0 cr)
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)

Other Recommended Courses
The following courses are not required to complete the pre-vet requirements.
Take 0 or more course(s) from the following:
• ANSC 1101 - Introductory Animal Science (4.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• FW 4103 - Principles of Wildlife Management (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3575 - Wetlands (3.0 cr)
• FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
• EEB 4129 - Mammalogy (4.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
• FW 5051 - Analysis of Populations (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• VPM 2400 - Managed Captive Wildlife (3.0 cr)
• VPM 2451 - Introductory Concepts in Raptor Rehabilitation (1.0 cr)
• VPM 4400 - Diseases in free-ranging and captive wildlife (3.0 cr)
Twin Cities Campus
Fisheries, Wildlife, and Conservation Biology Minor
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 18

The fisheries, wildlife, and conservation biology minor enables students in programs such as biology, communications, education, forestry, natural resources, environmental studies, and others to develop an understanding of the principles and practices of fisheries, wildlife, and conservation biology. An overview is provided of fish and wildlife biology and the general principles applied to managing their populations and habitats. Students interested in the minor should contact the CFANS Student Services Office.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Intro to FWCB/Ecology
Transfer students and those with more than 60 credits may substitute a class from the Advanced FW list below for this requirement.
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (4.0 cr)
or FNRM 3104 - Forest Ecology (4.0 cr)
or any other ecology course approved by the Undergraduate Coordinator

Principles of Fisheries, Wildlife and Conservation Biology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
- FW 4103 - Principles of Wildlife Management (3.0 cr)
- FW 4107 - Principles of Fisheries Science and Management (3.0 cr)

Human Dimensions
Note: students may not take both 3000 & 5000 versions of the same class.
Take 1 or more course(s) from the following:
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
- FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)

Organismal
Take 1 or more course(s) from the following:
- FW 4101 - Herpetology (4.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
- EEB 4134 - Introduction to Ornithology (4.0 cr)
- EEB 4839 - Field Studies in Mammalogy (4.0 cr)
- EEB 4844 - Field Ornithology (4.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)

Advanced FW
Courses may require senior status and/or instructor's permission.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)
- FW 4001 - Biometry (4.0 cr)
- FW 4301 - Conservation Genetics (3.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- FW 5051 - Analysis of Populations (4.0 cr)
• FW 5459 - Stream and River Ecology (3.0 cr)
• FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
• ESPM 5071 - Ecological Restoration (4.0 cr)
Twin Cities Campus
Food Science B.S.
Food Science & Nutrition
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 89
- No.
- Degree: Bachelor of Science

Food science applies chemistry, microbiology, and engineering to the science and technology of developing healthy, safe, convenient, and innovative food products with extended shelf life. Chemistry is a major component in food science because foods and their constituents undergo chemical reactions and interactions during thermal treatment, processing, refrigeration, freezing, storage and in the presence of unique additives or microbes. These chemical reactions and interactions impact flavor, texture, shelf life, and overall consumer acceptability. Microbiology is also key to the food science discipline. Food processing may involve the use of microorganisms as in the production of bread, cheese, yogurt, sauerkraut, and tempeh. On the other hand, control of spoilage and pathogenic microorganisms is important to extend a products shelf life, ensure safety, and prevent foodborne outbreaks. Physics, mathematics, and engineering are applied in food science because foods must be prepared on a large scale utilizing various mechanical and automated procedures to ensure safety and product consistency. In the food science major, students also learn about sensory/consumer science, packaging, nutritional labeling, analytical procedures, as well as government regulations. The food science program is offered through the College of Food, Agricultural and Natural Resource Sciences.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All major requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C- or better. At least 18 upper division credits must be taken at the University of Minnesota Twin Cities campus.

Foundation Courses
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
  - or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  - or MATH 1271 - Calculus I [MATH] (4.0 cr)
- PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  - or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
Students in both tracks must take BIOC 3021 or approved equivalent
- BIOC 3021 - Biochemistry (3.0 cr)
  - or BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
  - or BIOL 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)

Interdisciplinary Learning
Core coursework which fulfills the CFANS requirement for an interdisciplinary course.

**FSCN 1102** - Food: Safety, Risks, and Technology [CIV] (3.0 cr)

**Experiential Learning**

Course which fulfills the CFANS requirements for an Experiential Learning course

**FSCN 4349** - Food Science Capstone (2.0 cr)

**Upper Division Writing Intensive within the Major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- **FSCN 4312W** - Food Analysis [WI] (4.0 cr)
- **WRIT 3562W** - Technical and Professional Writing [WI] (4.0 cr)

**Program Sub-plans**

Students are required to complete one of the following sub-plans.

**Food Science Sub Plan A**

Food Science Sub Plan A is an approved program by the Institute of Food Technologists (IFT), the professional organization for Food Science, and thus complies with the core competencies and student learning outcomes of IFT. Sub Plan A is comparable to other Food Science Programs across the nation that have IFT approval. Students graduating with Sub Plan A are in a competitive position to secure food industry jobs. Freshman and transfer students default into the Sub Plan A sub-plan. Students must meet with an adviser in order to declare Sub Plan B.

**Additional Foundation Courses - Chemistry**

- **CHEM 2301** - Organic Chemistry I (3.0 cr)
- **CHEM 2302** - Organic Chemistry II (3.0 cr)
- **CHEM 2311** - Organic Lab (4.0 cr)

**Professional Courses**

- **BBE 4744** - Engineering Principles for Biological Scientists (4.0 cr)
- **FSCN 3102** - Introduction to Food Science (3.0 cr)
- **FSCN 4121** - Food Microbiology (3.0 cr)
- **FSCN 4122** - Food Fermentations and Biotechnology (2.0 cr)
- **FSCN 4123** - Molecular Biology for Applied Scientists (1.0 cr)
- **FSCN 4131** - Food Quality (3.0 cr)
- **FSCN 4312W** - Food Analysis [WI] (4.0 cr)
- **FSCN 4332** - Food Processing Operations (3.0 cr)
- **FSCN 4113** - Ingredient Functionality and Applications in Food (2.0 cr)
- **FSCN 4112** - Food Chemistry and Functional Foods (3.0 cr)
- **FSCN 4482** - Sensory Evaluation of Food Quality (2.0 cr)
- **FSCN 1112** - Principles of Nutrition [TS] (3.0 cr)

**Communication**

- **WRIT 3562W** - Technical and Professional Writing [WI] (4.0 cr)

**Public Speaking/Professional Communication**

- **COMM 1101** - Introduction to Public Speaking [CIV] (3.0 cr)
- **or AECM 2421W** - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)

**Additional Foundation Courses - Microbiology**

- **FSCN 2021** - Introductory Microbiology (4.0 cr)
- **or VBS 2032** - General Microbiology With Laboratory (5.0 cr)
- **or MICB 3301** - Biology of Microorganisms (5.0 cr)

**Food Science Sub Plan B**

Food Science Sub Plan B is a shorter program than Sub Plan A. Students may use the free credits to minor in a different field, such as Chemistry, Microbiology, Biochemistry, Economics, Business management, or any other field of interest based on future career choices. Food Science Sub Plan B is not approved by IFT.

**Additional Foundation Courses - Chemistry**

- **CHEM 2301** - Organic Chemistry I (3.0 cr)
- **CHEM 2302** - Organic Chemistry II (3.0 cr)

**Professional Courses**

- **FSCN 4113** - Ingredient Functionality and Applications in Food (2.0 cr)
- **FSCN 1112** - Principles of Nutrition [TS] (3.0 cr)
FSCN 3102 - Introduction to Food Science (3.0 cr)
FSCN 4121 - Food Microbiology (3.0 cr)
FSCN 4122 - Food Fermentations and Biotechnology (2.0 cr)
FSCN 4123 - Molecular Biology for Applied Scientists (1.0 cr)
FSCN 4131 - Food Quality (3.0 cr)
FSCN 4312W - Food Analysis [WI] (4.0 cr)
FSCN 4332 - Food Processing Operations (3.0 cr)
FSCN 4112 - Food Chemistry and Functional Foods (3.0 cr)
FSCN 4482 - Sensory Evaluation of Food Quality (2.0 cr)

Communication
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Microbiology
FSCN 2021 - Introductory Microbiology (4.0 cr)
or VBS 2032 - General Microbiology With Laboratory (5.0 cr)
Twin Cities Campus
Food Science Minor
Food Science & Nutrition
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 30 to 32

See major description for more information.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite coursework for program requirements
These courses are prerequisites for courses required by the Food Science Minor.
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)

Minor Requirements
Many courses in the minor have prerequisites that do not count towards the total credits.

Minor Courses
FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
FSCN 3102 - Introduction to Food Science (3.0 cr)
FSCN 4112 - Food Chemistry and Functional Foods (3.0 cr)
FSCN 4121 - Food Microbiology (3.0 cr)
FSCN 4113 - Ingredient Functionality and Applications in Food (2.0 cr)
FSCN 4332 - Food Processing Operations (3.0 cr)

Choose one of the following courses (2-4 cr)
Elective courses for the food science minor.
FSCN 4122 - Food Fermentations and Biotechnology (2.0 cr)
or FSCN 4131 - Food Quality (3.0 cr)
or FSCN 4311 - Chemical Reactions in Food Systems (2.0 cr)
or FSCN 4312W - Food Analysis [WI] (4.0 cr)
Twin Cities Campus
Food Systems B.S.
Agronomy & Plant Genetics, Applied Economics, Bioproducts and Biosystems Engineering, Horticultural Science
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 71 to 75
- Degree: Bachelor of Science

Food systems are interconnected sets of biological, technological, economic, and social activities that nourish human populations. The activities include farming, food processing and manufacturing, food distribution and retailing, food consumption, and managing post-consumption food waste. The food systems major offers graduates the knowledge, problem-solving skills and leadership ability to address complex and often controversial challenges and opportunities in food systems, guided by a desire to create systems that are increasingly sustainable in environmental, economic, and social terms, in diverse contexts and at different scales.

The core courses in the food systems major begin with an orientation to food systems followed by a three-course core sequence that provides a basic understanding of the structure and interactions within food systems, introduces techniques for life cycle analysis of the outcomes, impacts and sustainability of food systems and explores conventional, sustainable and organic examples of production systems for food plants. The core course sequence culminates in a capstone experience aimed at solving real-world problems in local community food systems, and involvement in future systems design and visioning.

Students will choose from one of three existing tracks of required courses, or in collaboration with an advisor, will develop an individually tailored coursework track.

Flexibility in course sequence and required courses has been incorporated into the major so that students can transfer into the program and still graduate in a timely fashion. This flexibility will also make it attractive to students who wish to pursue a dual major or minor with food systems as one of those majors.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 18 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Integrated Food Systems Core Courses

Plant Production Systems
- FDSY 2101 - Plant Production Systems (3.0 cr)

Sustainability of Food Systems: A Life Cycle Perspective
- BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)

An Introduction to the Food System: Analysis, Management, and Design - Interdisciplinary Learning

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Information current as of September 02, 2020
APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
Holistic Approaches to Improving Food Systems Sustainability - Experiential Learning
FDSY 4101 - Holistic Approaches to Improving Food Systems Sustainability (3.0 cr)
Internship Requirement - Experiential Learning
Select 1 course:
HORT 4096W - Professional Experience Program: Internship [WI] (2.0 cr)
or AGRO 4096W - Professional Experience Program: Internships [WI] (2.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
or CFAN 2096 - Reflecting on Your Professional Experience (1.0 cr)
Writing Intensive Selections
FDSY 1016W - Growing Food & Building Community: Urban Agriculture in the Twin Cities [WI] (3.0 cr)

Communications
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [DIV] (3.0 cr)

Physical and Biological Sciences
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

Mathematical Thinking
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)

Social Sciences
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Interdisciplinary Learning
APEC 3202 fulfills this requirement. APEC 3202 also meets Integrated Food Systems Core Course.

Experiential Learning
Any of the internship courses - HORT 4096W, AGRO 4096W, CFAN 3096, or CFAN 2096 - or FDSY 4101 will meet this requirement and the Food Systems core requirement.

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Agroecology
Students in this track will be prepared for jobs emerging in managing the relationship between agricultural production systems and surrounding resource systems, including landscapes, waterways, and food and energy systems. Positions are rapidly emerging with government at multiple levels, non-profits, and private sector consulting and engineering firms, etc. Students will also be solidly prepared for advanced scientific study in graduate school in a range of fields related to the ecology of agricultural systems.

Required Courses
ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)
HORT 2100 - Agricultural Biochemistry (3.0 cr)
or BIOC 3021 - Biochemistry (3.0 cr)
HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)
Track Electives
Choose at least 16 credits from the following, of which at least 9 credits must be upper division.

Take 16 or more credit(s) from the following:
- AGRO 2501 - Plant Identification for Urban and Rural Landscapes (1.0 cr)
- AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- AGRO 4888 - Issues in Sustainable Agriculture (2.0 cr)
- AGRO 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
- ESPM 5071 - Ecological Restoration (4.0 cr)
- HORT 1014 - Edible Landscape [TS] (3.0 cr)
- GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
- AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
- PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
- AGRO 5301 - Ecology of Agricultural Systems (3.0 cr)
- AGRO 2022 - Growth and Development of Minnesota Field Crops (1.0 cr)
- AGRO 4605 - Strategies for Agricultural Production and Management (3.0 cr)

Directed Study & Directed Research

Directed Study
- HORT 3093 - Directed Study (1.0 - 4.0 cr)
- or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
- or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
- or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
- or PLPA 3993 - Directed Study (1.0 - 4.0 cr)

Directed Research
- HORT 3094 - Directed Research (1.0 - 4.0 cr)
- or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
- or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
- or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
- or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

Consumer and Markets
Students in this track will study aspects of the food system that extend beyond primary food production, including processing, wholesale and retail distribution, consumer choice, and human nutrition. This track will prepare students for careers in these aspects of the food system. Note that most of these courses have prerequisites.

Required Courses
- HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
- or BIOL 1009 - General Biology [BIOL] (4.0 cr)

Track Electives
Select at least 30 credits from the following, of which at least 16 must be upper division (3XXX or above)

Take 30 or more credit(s) from the following:
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- APEC 3071 - Microeconomics of International Development (3.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3501 - Agribusiness Finance (3.0 cr)
- APEC 3551 - Concept Design and Value-Added Entrepreneurship in Food, Agricultural and Natural Resource Sciences (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
- APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
- FSCN 1011 - Science of Food and Cooking [PHYS] (4.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 2001 - A Food Systems Approach to Cooking for Health and the Environment (3.0 cr)
- FSCN 2021 - Introductory Microbiology (4.0 cr)
- FSCN 3102 - Introduction to Food Science (3.0 cr)
- FSCN 3612 - Life Cycle Nutrition (3.0 cr)
- FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
- FSCN 4131 - Food Quality (3.0 cr)
- HORT 1031 - Vines and Wines: Introduction to Viticulture and Enology (3.0 cr)
- GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• HORT 4461 - Horticultural Marketing (3.0 cr)
  or APEC 4461 - Horticultural Marketing (3.0 cr)

• Macroeconomics
  • APEC 1102 - Principles of Macroeconomics (3.0 cr)
  or ECON 1102 - Principles of Macroeconomics (4.0 cr)

• Directed Study & Directed Research
  Directed Study
  HORT 3093 - Directed Study (1.0 - 4.0 cr)
  or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
  or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
  or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
  or PLPA 3993 - Directed Study (1.0 - 4.0 cr)
  or Directed Research
  HORT 3094 - Directed Research (1.0 - 4.0 cr)
  or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
  or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
  or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
  or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

Organic and Local Food Production
In this track, students will pursue advanced coursework in horticultural science and organic production. This course of study will prepare them for advanced scientific study in graduate school, science-focused career paths, and preparation to become a producer or grower.

Required Courses
HORT 2100 - Agricultural Biochemistry (3.0 cr)
PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)
CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Track Electives
Take 13 or more credit(s) from the following:
• ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• HORT 1015 - Woody and Herbaceous Plants (4.0 cr)
• HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
• HORT 5031 - Fruit Production and Viticulture for Local and Organic Markets (3.0 cr)
• HORT 5032 - Organic Vegetable Production (3.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
• GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
• HORT 4113 - Identifying Plants for the Home and Garden: Garden, Annual, and Potted Plants (1.0 cr)
• GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
• PLSC 3401 - Plant Genetics and Breeding (4.0 cr)
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
• AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
• PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
• AGRO 5321 - Ecology of Agricultural Systems (3.0 cr)
• AGRO 4888 - Issues in Sustainable Agriculture (2.0 cr)
• HORT 1031 - Vines and Wines: Introduction to Viticulture and Enology (3.0 cr)
• HORT 1014 - Edible Landscape [TS] (3.0 cr)
• HORT 4461 - Horticultural Marketing (3.0 cr)
  or APEC 4461 - Horticultural Marketing (3.0 cr)

• Directed Study & Directed Research
  Directed Study
  HORT 3093 - Directed Study (1.0 - 4.0 cr)
  or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
  or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
  or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
  or PLPA 3993 - Directed Study (1.0 - 4.0 cr)
  or Directed Research
  HORT 3094 - Directed Research (1.0 - 4.0 cr)
  or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
  or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

**Individualized**

Students choosing to follow this track will identify, in consultation and with the approval of a faculty advisor, a track made up of a minimum of 30 credits where at least 16 credits are upper division (3xxx or higher). The track will address the interests and ambitions of the student and will be consistent with the learning outcomes of the Food Systems major.

**Required Courses**

HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)
**Twin Cities Campus**

**Food Systems Minor**

*Agronomy & Plant Genetics, Applied Economics, Bioproducts and Biosystems Engineering, Horticultural Science*

**College of Food, Agricultural and Natural Resource Sciences**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 18 to 21

The Food Systems minor is for students who want to supplement their major program by developing the interdisciplinary knowledge and problem-solving skills needed to address complex challenges and opportunities in food systems. The focus is on designing and developing food systems that are sustainable in environmental, economic, and social terms.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

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**Minor Requirements**

**Minor Core**

Students must complete the following three courses:

- **FDSY 2101** - Plant Production Systems (3.0 cr)
- **BBE 3201** - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
- **APEC 3202** - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)

**Electives**

Complete a minimum of 9 credits within one of the following three tracks.

**Agroecology Track**

Take 9 or more credit(s) from the following:

- **ESPM 3108** - Ecology of Managed Systems [ENV] (3.0 cr)
- **SOIL 2125** - Basic Soil Science [PHYS, ENV] (4.0 cr)
- **HORT 2100** - Agricultural Biochemistry (3.0 cr)
  - or **BIOL 3201** - Biochemistry (3.0 cr)
- **PLSC 3005W** - Introduction to Plant Physiology [WI] (4.0 cr)

-OR-

**Consumer and Markets Track**

Take 9 or more credit(s) from the following:

- **ANSC 1511** - Food Animal Products for Consumers (3.0 cr)
- **APEC 3071** - Microeconomics of International Development (3.0 cr)
- **APEC 3411** - Commodity Marketing (3.0 cr)
- **APEC 3501** - Agribusiness Finance (3.0 cr)
- **APEC 4451W** - Food Marketing Economics [CIV, WI] (3.0 cr)
- **HORT 4461** - Horticultural Marketing (3.0 cr)
- **APEC 4481** - Futures and Options Markets (3.0 cr)
- **APEC 4821W** - Business Economics and Strategy [WI] (3.0 cr)
- **APEC 5841** - Agricultural Cooperatives and Mutuals (3.0 cr)
- **FSCN 1011** - Science of Food and Cooking [PHYS] (4.0 cr)
- **FSCN 1102** - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- **FSCN 2001** - A Food Systems Approach to Cooking for Health and the Environment (3.0 cr)
- **FSCN 2021** - Introductory Microbiology (4.0 cr)
- **FSCN 3102** - Introduction to Food Science (3.0 cr)
- **FSCN 3612** - Life Cycle Nutrition (3.0 cr)
- **FSCN 3615** - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
- **FSCN 4131** - Food Quality (3.0 cr)
- **HORT 1031** - Vines and Wines: Introduction to Viticulture and Enology (3.0 cr)
- **APEC 3551** - Concept Design and Value-Added Entrepreneurship in Food, Agricultural and Natural Resource Sciences (3.0 cr)
- **APEC 3811** - Principles of Farm Management (3.0 cr)
- OR -

Organics and Local Food Production Track
Take 9 or more credit(s) from the following:
• HORT 2100 - Agricultural Biochemistry (3.0 cr)
• PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)
• CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
• HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
• HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
• SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
Twin Cities Campus

Forest and Natural Resource Management B.S.
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 90
- This program requires summer terms.
- Degree: Bachelor of Science

The forest and natural resource management curriculum prepares students to plan, implement, and research the management, protection, and sustainable use of forest and related natural resources and environments, including vegetation, timber, water, wildlife, recreation, and aesthetic resources. The curriculum provides a unique integration of the physical, biological, and social sciences with managerial sciences and policy, field skill development, and technologies for measuring and monitoring natural resources for ecological, economic, and social benefits. Students are also trained in problem solving approaches to address specific local, regional, and global issues. Students select one of three tracks: 1) forest ecosystem management and conservation, 2) park and protected area management, or 3) urban and community forestry. Minors are also available for each track.

Graduates find positions as foresters; forest, park, river or wilderness rangers; urban foresters; land and water managers; protected area managers; habitat managers; resource-based tourism providers; specialists in forest fire protection, ecology, ecosystem health, harvesting and silviculture; nursery managers; geographic information specialists; resource analysts/consultants; environment and natural resource law and policy analysts; land acquisition specialists; environmental and natural resource planners; outdoor recreation planners; heritage preservation specialists; conservationists; and educators and researchers. Principal employers are federal, state and local forestry, wildlife, parks, wilderness, conservation and related natural resource management agencies; forest products industry and related natural resource firms; landowner organizations; consulting firms; nongovernmental conservation organizations and international development agencies.

Additionally, the curriculum provides excellent preparation in the fundamental and applied sciences that is essential for graduate study and careers in research and teaching. Opportunities for experiential learning through internships and field courses, as well as international study abroad programs, are available.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 22 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Communication Skills
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or AECM 2421W - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)

Physical and Biological Sciences
BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)
PMB 2022 - General Botany (3.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
Chemistry
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Economics and Policy
ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)

Other Core Courses
*FNRM 4232W meets the requirement for Experiential Learning
FNRM 1001 - Orientation and Information Systems (1.0 cr)
FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
• HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
• URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Forest Ecosystem Management and Conservation
Students pursuing the forest ecosystem management and conservation sub-plan learn the principles, practices, and techniques of forestry and related natural resource management. The sub-plan prepares students to become directly involved in forest ecosystem management or further specializations, such as resource analysis, conservation planning, forest protection, or policy analysis. Principal employers are federal, state and county forestry, wildlife, and conservation agencies; forest products companies; consulting firms; international agencies; and nongovernmental conservation organizations. This sub-plan is accredited by the Society of American Foresters. Further, successful completion of sub-plan course work qualifies a student for the Society of American Foresters’ Candidate Certified Forester program.

All required courses in this sub-plan must be taken A-F and completed with a grade of at least C-.

Mathematical Thinking
ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
MATH 1151 - Precalculus II [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)

Forest Ecosystem Management and Conservation Core
FNRM 3104 - Forest Ecology (4.0 cr)
FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
FNRM 3218 - Measuring and Modeling Forests (3.0 cr)
FNRM 3282 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
FNRM 3431 - Timber Harvesting and Road Planning (2.0 cr)
FNRM 3471 - Forest Management Planning (3.0 cr)
FNRM 5413 - Managing Forest Ecosystems: Silviculture Lab (1.0 cr)
ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
Field Training in the Biology and Assessment of Forests

NOTE: These classes take place in August at the Cloquet Forestry Center, Cloquet, MN. FNRM 2101 and 2104 are summer registration. FNRM 2102 is fall registration.

FNRM 2101 - Identifying Forest Plants (1.0 cr)
FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
FNRM 2104 - Measuring Forest Resources (1.0 cr)

Advanced Field Training in the Assessment and Management of Forests
FNRM 3562 - Field Remote Sensing (1.0 cr)

The following courses are taught at the Cloquet Forestry Center, Cloquet, MN
FNRM 4511 - Field Silviculture (2.0 cr)
FNRM 4515 - Field Resource Survey (1.0 cr)
FNRM 4521 - Field Timber Harvesting and Road Planning (2.0 cr)

Interdisciplinary Learning
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or FNRM 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
or ESPM 3575 - Wetlands (3.0 cr)
or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
or ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
or CFFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
or GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
or GCC 5001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
or GCC 3007 - Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 5007 - Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
or GCC 5013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
or GCC 5017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or GCC 5017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 5031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
or PLPA 2003 - Plague, Famine, and Beer: The Impact of Microscopic Organisms on Human Civilization [HIS] (3.0 cr)
or SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)

Park and Protected Area Management
The park and protected area management sub-plan prepares students to plan for and manage natural resources, especially protected areas such as parks, forests, wild lands, and water resources, for multiple benefits including those attained by visitors, resource-dependent communities, and society as a whole. The curriculum emphasizes natural and managed protected areas; natural resource-oriented recreation programs in public and private sectors; social science aspects of natural resource use; and skills in communication, planning, and management. Graduates often serve as park, river or wilderness rangers; protected area managers; outdoor recreation planners; resource-based tourism providers; heritage preservation specialists; and outdoor educators. Typical employers include protected area management and planning agencies within federal, state, and local parks; forestry; wildlife; nature conservation; and related non-governmental organizations. Additionally, this curriculum provides excellent preparation for graduate training in the human dimensions of natural resources. A minor is also available. Students may also apply credits toward the international ecotourism certificate.

All required courses in this sub-plan must be taken A-F and completed with a grade of at least C-.

Mathematical Thinking
ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)

Social Sciences
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
PSY 3201 - Introduction to Social Psychology (3.0 cr)
or SOC 3721 - Principles of Social Psychology (3.0 cr)

Management of Biophysical Resources
FNRM 3104 - Forest Ecology (4.0 cr)
or ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
or ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
*FW 2001W meets the requirement for Interdisciplinary Learning
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
or FW 4103 - Principles of Wildlife Management (3.0 cr)

Park and Protected Area Management Core
FNRM 3101 - Park and Protected Area Tourism (3.0 cr)
FNRM 3209 - Visitor Behavior Analysis (3.0 cr)
ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
ESPM 4811 - Environmental Interpretation (3.0 cr)

Field course(s) or Internship
Complete 1-4 credits.
CFAN 2096 - Reflecting on Your Professional Experience (1.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)
or FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)

or Introductory Cloquet Field Session
NOTE: These classes take place in August at the Cloquet Forestry Center, Cloquet, MN. FNRM 2101 and 2104 are summer registration. FNRM 2102 is fall registration. These classes must all be taken to fulfill the FNRM field course requirement.
FNRM 2101 - Identifying Forest Plants (1.0 cr)
FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
FNRM 2104 - Measuring Forest Resources (1.0 cr)

Interdisciplinary Learning
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or FNRM 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
or ESPM 3575 - Wetlands (3.0 cr)
or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
or ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
or CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [CIV] (3.0 cr)
or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
or GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
or GCC 5001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
or GCC 3007 - Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 3007 - Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 5007 - Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
or GCC 3013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
or GCC 5013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
or GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or GCC 5017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 5031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
or PLPA 2003 - Plague, Famine, and Beer: The Impact of Microscopic Organisms on Human Civilization [HIS] (3.0 cr)
or SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)

Urban & Community Forestry
The urban and community forestry sub-plan prepares students for planning and managing vegetation and related natural resources in or near urban communities, and for specialties, such as urban planning and environmental education. Urban forests include areas along streets, in parks, private lands, greenbelts, and open spaces. Graduates help plan, design, and protect these forests including supervision of tree selection, planting, and plant health care programs. Employers include city government, tree care/arboretural firms, state and federal forestry agencies, nurseries, and utility companies. Graduates may also qualify for traditional forestry positions. This sub-plan is also accredited by the Society of American Foresters.
All required courses in this sub-plan must be taken A-F and completed with a grade of at least C-.

Mathematical Thinking
- **ESPM 3012** - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
- or **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)
- **MATH 1151** - Precalculus II [MATH] (3.0 cr)
- or **MATH 1142** - Short Calculus [MATH] (4.0 cr)
- or **MATH 1271** - Calculus I [MATH] (4.0 cr)

Urban and Community Forestry Core
- **FNRM 3501** - Arboriculture: Selection and Maintenance of Trees (3.0 cr)
- **HORT 1015** - Woody and Herbaceous Plants (4.0 cr)
- **FNRM 4501** - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
- **ENT 4251** - Forest and Shade Tree Entomology (3.0 cr)
- **PLPA 3003** - Diseases of Forest and Shade Trees (3.0 cr)
- **FNRM 3104** - Forest Ecology (4.0 cr)
- **FNRM 3411** - Managing Forest Ecosystems: Silviculture (3.0 cr)
- **PMB 3002** - Plant Biology: Function (2.0 cr)
- **FNRM 3218** - Measuring and Modeling Forests (3.0 cr)
- or **ESPM 3211** - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
- **FNRM 3114** - Hydrology and Watershed Management (3.0 cr)
- or **ESPM 4061W** - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
- **LA 3501** - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
- or **HORT 4141W** - Scheduling Crops for Protected Environments [WI] (4.0 cr)
- **URBS 1001W** - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
- or **URBS 3001W** - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)

Field Training in the Biology and Assessment of Forests
NOTE: These classes take place in August at the Cloquet Forestry Center, Cloquet, MN. FNRM 2101 and 2104 are summer registration. FNRM 2102 is fall registration.
- **FNRM 2101** - Identifying Forest Plants (1.0 cr)
- **FNRM 2102** - Northern Forests Field Ecology (2.0 cr)
- **FNRM 2104** - Measuring Forest Resources (1.0 cr)

Interdisciplinary Learning
- **FNRM 4501** - Urban Forest Management: Managing Greenspaces for People (3.0 cr)

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Information current as of September 02, 2020
Twin Cities Campus

Forest Ecosystem Management and Conservation Minor

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 18 to 19

The forest resources minor helps students in natural resources and other areas gain deeper understanding of the scientific foundations of forestry, the management of forest resources, and the importance of forest resources to society. Students select from an array of courses in forest assessment, forest biology and management, and forest economics and policy. Students may include a three-week, hands-on field session at the Cloquet Forestry Center as part of their minor. Students interested in the minor should contact the CFANS Student Services Office.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Core Courses
- FNRM 3104 - Forest Ecology (4.0 cr)
- FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)

Lab/Field Experiences
- Take 3 or more credits from the following:
  - FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
  - FNRM 2101 - Identifying Forest Plants (1.0 cr)
  - FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
  - FNRM 2104 - Measuring Forest Resources (1.0 cr)
  - These classes take place in August at the Cloquet Forestry Station, Cloquet, MN. FNRM 2101 and 2104 are summer registration. FNRM 2102 is fall registration.

Forest Policy, Management, and Planning
- Take 3 or more credits from the following:
  - ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
  - ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
  - FNRM 3471 - Forest Management Planning (3.0 cr)
  - FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)

Additional Courses
- Take remaining credits to reach required total from the following two areas

Resource Assessment
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
- FNRM 3218 - Measuring and Modeling Forests (3.0 cr)
- FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)

Ecology and Management of Vegetation, Wildlife, Water and Soil Resources
- FNRM 3501 - Arboriculture: Selection and Maintenance of Trees (3.0 cr)
- FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
- FNRM 3431 - Timber Harvesting and Road Planning (2.0 cr)
- FNRM 5413 - Managing Forest Ecosystems: Silviculture Lab (1.0 cr)
- FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
- FNRM 3204 - Landscape Ecology and Management (3.0 cr)
- FNRM 3205 - Productivity and Ecology of Forest Soils (3.0 cr)
- ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
- PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
Twin Cities Campus

Horticulture Minor

Horticultural Science

College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18

Plants provide many practical and recreational benefits to society—whether it is the food we eat, the parks we play in, or the gardens we enjoy admiring. The horticulture minor is geared toward students who want to learn more about plants and their many, diverse uses in the landscape. Coursework is flexible and can easily be tailored to specific horticultural interests, including floriculture and nursery production, turfgrass science, landscape design and maintenance, fruit and vegetable production, sustainable and organic production practices, therapeutic horticulture, plant physiology, and genetics. Students wishing to complete a minor in horticulture should contact the Department of Horticultural Science, 305 Alderman Hall for assistance.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
A minimum of 3 minor credits must be completed at the University of Minnesota Twin Cities.

Minor Core
Take exactly 1 course(s) from the following:
• HORT 1001 - Plant Propagation [BIOL] (4.0 cr)

Electives
Take 14 or more credit(s) from the following:
HORT 1xxx-3xxx
Take 0 or more credit(s) from the following:
• HORT 1xxx
• HORT 2xxx
• HORT 3xxx

HORT 4xxx-5xxx
Take 2 or more course(s) from the following:
• HORT 4xxx
• HORT 5xxx

Directed Study and Research
Take 0 - 3 credit(s) from the following:
• HORT 3093 - Directed Study (1.0 - 4.0 cr)
• HORT 3094 - Directed Research (1.0 - 4.0 cr)

Take 0 - 4 credit(s) from the following:
• AGRO 1xxx
• AGRO 2xxx
• AGRO 3xxx
• AGRO 4xxx
• AGRO 5xxx
• BIOL 1xxx
• BIOL 2xxx
• BIOL 3xxx
• BIOL 4xxx
• BIOL 5xxx
• ENT 1xxx
• ENT 2xxx
• ENT 3xxx
• ENT 4xxx
• ENT 5xxx
• PLPA 1xxx
• PLPA 2xxx
• PLPA 3xxx
• PLPA 4xxx
• PLPA 5xxx
• SOIL 1xxx
• SOIL 2xxx
• SOIL 3xxx
• SOIL 4xxx
• SOIL 5xxx
Twin Cities Campus
Insect Science Minor
Entomology
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

This minor provides strong background in entomological principles and theory for career preparedness for graduate programs and exciting professions in natural resources and conservation of pollinators and other insects, medicine, plant health, and protection related to agriculture, horticulture, forestry, greenhouse and nursery management, or teaching biology in secondary education institutions. For more information, contact Insect Science Minor Advisor - Matt Petersen (pet03207@umn.edu).

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Core Requirement
ENT 1005 - Insect Biology with Lab [BIOL] (4.0 cr)

Electives
Courses are listed under suggested areas of concentration. However, you may take from any or all categories to complete 12 credits. Take 12 or more credit(s) from the following:

Conservation & Environmental Assessment
Develop the skills needed for the identification and management of invasive and native insects in forests, prairies, aquatic systems, and other habitats. Learn how insects are used as biological indicators of ecosystem health. Careers options include forest health specialist, ecologist, pest management specialist, agronomist, natural resource manager, or water quality specialist. Take 0 (zero) or more courses from following.

• ENT 2920 - Introductory Lectures in Entomology (1.0 - 4.0 cr)
or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)
or ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
or ENT 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
or ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
or ENT 5011 - Insect Structure and Function (4.0 cr)
or ENT 5021 - Insect Biodiversity and Evolution (4.0 cr)
or ENT 5041 - Insect Ecology (3.0 cr)
or ENT 5051 - Scientific Illustration of Insects (3.0 cr)
or ENT 5126 - Spatial and Temporal Analysis of Ecological Data (3.0 cr)
or ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
or ENT 5361 - Aquatic Insects (4.0 cr)
or ESPM 1012H - Environmental Science and Society [ENV] (3.0 cr)
or ESPM 3480 - Topics in Natural Resources (1.0 - 4.0 cr)
or HSEM 2637H - Small but Impactful: Insects and the Environment [ENV] (3.0 cr)

• Medicine & Global Health
Develop a strong background in the epidemiology of arthropodvectored diseases of humans and other animals while enhancing your marketable skills for careers in veterinary science or public health. Take 0 (zero) or more courses from following.

• CFAN 3334 - Parasites and Pestilence (3.0 cr)
or ENT 1021 - An Introduction to Forensic Entomology (3.0 cr)
or ENT 2884 - The Six-legged Conquerors: How insects have shaped human history [HIS] (3.0 cr)
or ENT 2920 - Introductory Lectures in Entomology (1.0 - 4.0 cr)
or ENT 3275 - Insect-transmitted diseases of humans (3.0 cr)
or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)
or ENT 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
or ENT 5011 - Insect Structure and Function (4.0 cr)
or ENT 5361 - Aquatic Insects (4.0 cr)

• Agriculture & Plant Protection
Learn the fundamentals of insect-plant interactions within agricultural and natural environments while developing a strong background
in integrated pest management, including pesticide application and biological control strategies.

Enhance your marketable skills for careers as a forest health specialist, crop consultant, grounds manager, pest management specialist, agronomist, and greenhouse or nursery technician. Take 0 (zero) or more courses from following.

• CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
  or ENT 2920 - Introductory Lectures in Entomology (1.0 - 4.0 cr)
  or ENT 3211 - Insect Pest Management (3.0 cr)
  or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)
  or ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
  or ENT 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
  or ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
  or ENT 5011 - Insect Structure and Function (4.0 cr)
  or ENT 5041 - Insect Ecology (3.0 cr)
  or ENT 5126 - Spatial and Temporal Analysis of Ecological Data (3.0 cr)
  or ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
  or ESPM 3480 - Topics in Natural Resources (1.0 - 4.0 cr)
  or HSEM 2637H - Small but Impactful: Insects and the Environment [ENV] (3.0 cr)

• Pollinator Ecology
  Develop your understanding of the important role insects play in plant reproduction while learning how to safeguard pollinator populations through knowledge local and landscape practices. Take 0 (zero) or more courses from following.
  • ENT 2920 - Introductory Lectures in Entomology (1.0 - 4.0 cr)
  or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)
  or ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
  or ENT 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
  or ESPM 3480 - Topics in Natural Resources (1.0 - 4.0 cr)
Twin Cities Campus
International Agriculture Minor
College of Food, Agri & Natural Resource Sciences
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 17 to 19

Due to the international nature of food and agricultural systems, CFANS students are strongly encouraged to incorporate an international experience into their academic degree program. Students with a particular interest in global issues can minor in international agriculture.

The minor is structured to include:
- Culture or language studies
- Expanded coursework in agriculture
- An academic, international experience where students are required to travel outside the United States for a minimum two-weeks

A students program must be developed in coordination with the minor coordinator with assistance from CFANS International Programs.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
International Opportunities: The University of Minnesota is partnering with a number of universities to provide short term and semester study abroad opportunities taught in English that allow for the study of international issues related to food production and environmental sustainability. Additional international practical or internship experiences may qualify for the minor. Arrangements can be made through CFANS International Programs, MAST International, the Learning Abroad Center or Career and Internship Services on the St. Paul campus. Travel grants for overseas experience are available through the Academic Enrichment Program and the Learning Abroad Center. For more information consult CFANS Study Abroad at

http://www.cfans.umn.edu/about/international

Minor Courses
Take 3 credits in area culture or language studies. This may include study of a second language or focus on an international culture. This section should be used to help students prepare for an international experience. Students should consult with the minor coordinator before taking classes.
Take 2 or more credit(s) from the following:
• CFAN 3093 - Directed Studies in International Agriculture (2.0 - 4.0 cr)
Take 3 or more credit(s) from the following:
• CFAN 3500 - International Field Studies Seminar (1.0 - 3.0 cr)
• CFAN 3501 - Costa Rica--Sustainable Development [GP] (3.0 cr)
• CFAN 3502 - Bahamas--Tropical Marine Biology and Shark Ecology (2.0 cr)
• CFAN 3503 - Switzerland--Mountain Agriculture [GP] (3.0 cr)
• CFAN 3504 - Thailand: Tiger Conservation and Vertebrate Field Methods [GP, ENV] (3.0 cr)
• CFAN 3505 - French Language and Culture (1.0 cr)
• CFAN 3512 - Sustainable Food Chains [GP] (3.0 cr)
• CFAN 3513 - The Natural History of Norway [GP, ENV] (3.0 cr)

Electives
Take 9 or more credit(s) from the following:

Food Production and Culture
Take 0 or more credit(s) from the following:
• AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
• FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
• GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• Economics, Policy, Trade and Development
Take 0 or more credit(s) from the following:

• APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
• APEC 3071 - Microeconomics of International Development (3.0 cr)
• APEC 5751 - Global Trade and Policy (3.0 cr)

• Natural Resources
  Take 0 or more credit(s) from the following:
  • ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
  • ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
Twin Cities Campus
Native American Environmental Knowledge Minor
College of Food, Agri & Natural Resource Sciences
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 19

This minor allows students to study Native American perspectives on the environment and natural resource systems from an interdisciplinary, culturally informed perspective, including coursework, practical experience, and community service. Required courses emphasize understanding the unique perspective of Native American approaches to science as it is applied to natural resources and the environment.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Freshman Seminar
This course provides introductory knowledge of Native American culture needed for the minor. Students must take this freshman seminar in the fall.
GCC 1908 - Ways of Knowing Science [DSJ] (3.0 cr)

Introduction to Cultural Systems
- AMIN 1001 - Introduction to American Indian & Indigenous Peoples [DSJ] (3.0 cr)
  - or AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  - or AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)
  - or DAKO 1121 - Beginning Dakota I (5.0 cr)
  - or DAKO 1122 - Beginning Dakota II (5.0 cr)
  - or OJIB 1101 - Beginning Ojibwe I (5.0 cr)
  - or OJIB 1102 - Beginning Ojibwe II (5.0 cr)
  - or POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)

American Indian Studies
In order to gain more in-depth knowledge and understanding of Native American culture, history, governance and/or language, student must take an additional upper division course from one of the following areas or courses.
Take 3 or more credit(s) from the following:
- AMIN 3xxx
- AMIN 4xxx
- AMIN 5xxx
- DAKO 3xxx
- DAKO 4xxx
- DAKO 5xxx
- OJIB 3xxx
- OJIB 4xxx
- OJIB 5xxx
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
  - or AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
  - or AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
- POL 4525W - Federal Indian Policy [WI] (3.0 cr)
  - or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
- AAAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  - or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
- HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  - or AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
Integrating Project
In order to integrate Native American environmental knowledge into the students chosen discipline, students need at least two credits under appropriate departmentally-housed directed studies, independent studies, or special topics designators. Students will need to find a faculty member in their department and negotiate an agreement academically worthy of at least two credits (literature reviews, research project, or other project that integrates the two topics).

Additional Credits
In order to give students some flexibility to pursue their interests in more detail, students will take at least 3 upper division credits that have significant Native American or major related content that helps integrate Native American environmental knowledge and their personal future goals. Three additional credits approved by the minor program coordinator (must be 3xxx, 4xxx, or 5xxx).

Service Learning Project
Students are expected to become familiar with community interests and needs. This is accomplished by completing a 3 credit service-learning project in the Native American community.

CFAN 3293 - Directed Study (1.0 - 4.0 cr)
**Twin Cities Campus**

**Nutrition B.S.**

**Food Science & Nutrition**

**College of Food, Agricultural and Natural Resource Sciences**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 70 to 90
- Degree: Bachelor of Science

The nutrition major explores how nutrients and the foods from which they are derived aid the body in health, growth, and development. With major national and international concerns for how food and nutrition affect health and disease, registered dietitians and nutritionists have many career opportunities. Students choose one of three options: 1) nutrition studies, 2) the Didactic Program in Dietetics, or 3) nutritional science.

Students expecting to apply to an internship or graduate school should maintain a GPA of at least 3.00. A cumulative GPA of at least 3.30 is highly recommended.

The Didactic Program in Dietetics (DPD) is currently granted accreditation by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, Phone: 800-877-1600, Website: www.eatright.org.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

At least 18 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

**Foundation Courses**

- **BIOC 3021** - Biochemistry (3.0 cr)
- **AECM 2421W** - Professional and Oral Communication for Agriculture, Food & the Environment [WI] (3.0 cr)
  - or **COMM 1101** - Introduction to Public Speaking [CIV] (3.0 cr)
- **BIOL 1009** - General Biology [BIOL] (4.0 cr)
  - or **ANSC 3301** - Human and Animal Physiology (3.0 cr)
  - or **PHSL 3051** - Human Physiology (4.0 cr)
  - or **BIOL 3211** - Physiology of Humans and Other Animals (3.0 cr)
- **VBS 2032** - General Microbiology With Laboratory (5.0 cr)
  - or **MICB 3301** - Biology of Microorganisms (5.0 cr)
  - or **FSCN 2021** - Introductory Microbiology (4.0 cr)
- **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)

**Core Courses**

All nutrition major students are required to complete these core nutrition-related courses.

- **FSCN 1112** - Principles of Nutrition [TS] (3.0 cr)
- **FSCN 2001** - A Food Systems Approach to Cooking for Health and the Environment (3.0 cr)
- **FSCN 3612** - Life Cycle Nutrition (3.0 cr)
- **FSCN 4612W** - Advanced Human Nutrition [WI] (4.0 cr)
FSCN 4613 - Experimental Nutrition (2.0 cr)
FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
FSCN 4621 - Nutrition and Metabolism (4.0 cr)

**Interdisciplinary Learning**
Course in the core curriculum which satisfy requirements for interdisciplinary learning.
FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)

**Experiential Learning**
Course that fulfills the requirement for experiential learning.
FSCN 2001 - A Food Systems Approach to Cooking for Health and the Environment (3.0 cr)
or CFAN 3096 - Making the Most of your Professional Experience (1.0 cr)

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
• FSCN 4612W - Advanced Human Nutrition [WI] (4.0 cr)

**Program Sub-plans**
Students are required to complete one of the following sub-plans.

**Didactic Program in Dietetics**
The Didactic Program in Dietetics (DPD) provides excellent undergraduate preparation to meet the knowledge requirements delineated by the Academy of Nutrition and Dietetics (AND) for entry-level dietitians. The DPD training includes a strong science component of biological sciences, chemistry, and biochemistry courses appropriate for admission to graduate school. A liberal arts core and specialized courses in nutrition, nutritional biochemistry, clinical nutrition, food science, menu planning, and food service management provide depth and breadth. The mission of the University of Minnesota DPD is to prepare students for entry into and successful completion of supervised practice leading to eligibility for the CDR credentialing exam to become a registered dietitian nutritionist, a variety of employment opportunities related to food and nutrition, or graduate/professional programs.

Students who plan to become registered dietitians must apply to the DPD according to specified criteria. There is no difference in the required courses; however, only those students who are accepted into the DPD will receive a Verification Statement, which is needed to enter into a dietetic internship.

**Didactic Program in Dietetics Courses**
FSCN 3614 - Nutrition Education and Counseling (3.0 cr)
FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
FSCN 3731 - Food Service Operations Management Laboratory (2.0 cr)
FSCN 3732 - Food Service Operations Management (3.0 cr)
FSCN 4665 - Medical Nutrition Therapy I (3.0 cr)
FSCN 4666 - Medical Nutrition Therapy II (3.0 cr)
FSCN 4667 - Dietetics Capstone and Interprofessional Education (1.0 cr)
FSCN 4732 - Food and Nutrition Management (3.0 cr)
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)

**Chemistry Tracks**

**Chemistry**
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)

**or Chemistry for the Life Sciences**
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

**Nutrition Studies**
Nutrition major students who do not select either the DPD or nutritional science sub-plan may utilize the remainder of the 120 credits needed to graduate by specializing in an area of their choosing. Specialization can include regulatory nutrition, entrepreneurial nutrition, health/wellness/medicine, nutrition communications, and existing minor. Contact your academic advisor to discuss recommended course options.

**Mathematics**

MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)  
*or* MATH 1142 - Short Calculus [MATH] (4.0 cr)  
*or* MATH 1271 - Calculus I [MATH] (4.0 cr)

**Chemistry Tracks**

**Chemistry**

CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)  
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)  
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)  
CHEM 2301 - Organic Chemistry I (3.0 cr)  
*or* **Chemistry for the Life Sciences**

CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)  
CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)  
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)  
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

**Upper Division Food Science and Nutrition Courses, 9 credits**

Students must complete at least 9 credits of 3000-level or above FSCN or NUTR designated courses. Students cannot select a course that is already required for the program.

Take 9 or more credit(s) from the following:

- FSCN 3xxx  
- FSCN 4xxx  
- NUTR 3xxx  
- NUTR 4xxx

**Nutrition Science**

The nutritional science option is for students planning to do graduate work in nutrition, related sciences, or professional programs such as medicine or dentistry.

**Nutritional Science Courses**

PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)  
PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)  
FSCN 4622 - Nutritional Toxicology, the basic science of diet-related toxicants (3.0 cr)  
PSY 1001 - Introduction to Psychology [SOC] (4.0 cr)  
ANAT 3601 - Principles of Human Anatomy (3.0 cr)  
ANAT 3602 - Principles of Human Anatomy Laboratory (2.0 cr)  
BIOL 4003 - Genetics (3.0 cr)  
*or* GCD 3022 - Genetics (3.0 cr)  
MATH 1142 - Short Calculus [MATH] (4.0 cr)  
*or* MATH 1271 - Calculus I [MATH] (4.0 cr)  
MATH 1272 - Calculus II (4.0 cr)  
FSCN 4112 - Food Chemistry and Functional Foods (3.0 cr)  
*or* FSCN 4121 - Food Microbiology (3.0 cr)  
*or* NUTR 5622 - Vitamin and Mineral Biochemistry (3.0 cr)  
*or* NUTR 5624 - Nutrition and Genetics (2.0 cr)  
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)  
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)  
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)  
CHEM 2301 - Organic Chemistry I (3.0 cr)  
*or* CHEM 2302 - Organic Chemistry II (3.0 cr)  
*or* CHEM 2311 - Organic Lab (4.0 cr)
Twin Cities Campus

Nutrition Minor
Food Science & Nutrition
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 26 to 29

The nutrition minor gives students a basic understanding of human nutritional needs through three required core courses. Based on the elective courses chosen, students then have the ability to focus in a specific area, such as metabolism or foods.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite Coursework
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
Biochemistry prerequisites for minor courses
BIOC 3021 - Biochemistry (3.0 cr)
or PHSL 3051 - Human Physiology (4.0 cr)
or ANSC 3301 - Human and Animal Physiology (3.0 cr)
or BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)

Minor Requirements
Some of the courses listed in the minor have prerequisites that do not count toward the 14 to 16 credits.

Minor Courses
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
FSCN 3612 - Life Cycle Nutrition (3.0 cr)
FSCN 4612W - Advanced Human Nutrition [WI] (4.0 cr)
Take 2 or more course(s) from the following:
- FSCN 3614 - Nutrition Education and Counseling (3.0 cr)
- FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
- FSCN 4613 - Experimental Nutrition (2.0 cr)
- FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
- FSCN 4621 - Nutrition and Metabolism (4.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 3102 - Introduction to Food Science (3.0 cr)
- FSCN 5601 - Management of Eating Disorders (3.0 cr)
Twin Cities Campus

Park and Protected Area Management Minor

Forest Resources

College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 20

The park and protected area minor prepares students to plan for and manage natural resources, especially protected areas such as parks, forests, wild lands, and water resources. This minor complements other degrees related to career opportunities in parks, recreation, tourism, planning, geography, environmental education, forestry and fisheries and wildlife. Typical employers include protected area management and planning agencies within federal, state, and local parks; forestry; wildlife; nature conservation; and related non-governmental organizations.

Program Delivery

This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Core Courses

- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- FNRM 3101 - Park and Protected Area Tourism (3.0 cr)
- FNRM 5259 - Visitor Behavior Analysis (3.0 cr)
- ESPM 4811 - Environmental Interpretation (3.0 cr)

Minor Options

Park and Protected Area Management Option

- Take 2 or more course(s) from the following:
  - ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
  - ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
  - FNRM 3104 - Forest Ecology (4.0 cr)
  - ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
  - FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)

  -OR-

Resource Based Tourism Option

- Take 2 or more courses(s) from the following:
  - FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)
  - ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
  - ANTH 3980 - Topics in Anthropology (3.0 cr)
  - APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
  - GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)

  -OR-

International Tourism Option

- Six credits international tourism coursework at UMN/or partner institute selected in consultation with and approved by minor adviser.
Twin Cities Campus
Plant Science B.S.
Agronomy & Plant Genetics, Entomology, Horticultural Science, Plant Pathology
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 79
- Degree: Bachelor of Science

The plant science major provides a broad course of study in plant sciences, as well as options to concentrate more specifically within an area of individual interest. The major prepares students for rewarding careers in diverse areas, such as research and development (plant breeding, genetics, or plant molecular biology); food and plant production (sustainable and organic production or floriculture and nursery production); plant use and function (restoration of damaged landscapes); and management of landscapes (agro-ecology and turf grass management). Students gain experience in the use of plants to produce food and other useful products, alter environments, restore damaged landscapes, improve human health and well-being, educate people about science and agriculture, improve community environments, and provide recreational and practical benefits to the public.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 13 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Core Courses
- AGRO 1660W - First-Year Colloquium/Experience in Agroecosystems Analysis [WI] (2.0 cr)
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
- HORT 1015 - Woody and Herbaceous Plants (4.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Mathematics
- MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
- or MATH 1051 - Precalculus I [MATH] (3.0 cr)
- or MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)

Statistics & Computing
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or BIOL 3272 - Applied Biostatistics (4.0 cr)
- or ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
- or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

Plant Breeding & Genetics
- PLSC 3401 - Plant Genetics and Breeding (4.0 cr)

Plant Physiology
- PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)

Biology, Botany, or Plant Propagation
- HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or PMB 2022 - General Botany (3.0 cr)

Chemistry
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

Chem Lecture Options
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)

Biochemistry
Students enrolled in Integrated plant science BS/MS applied plant science plant breeding must enroll in BIOC 3021 rather than HORT 2100
HORT 2100 - Agricultural Biochemistry (3.0 cr)
or BIOC 3021 - Biochemistry (3.0 cr)

Experiential Learning
HORT 4096W - Professional Experience Program: Internship [WI] (2.0 cr)
or AGRO 4096W - Professional Experience Program: Internships [WI] (2.0 cr)
or AGRO 4094W - Undergraduate Directed Thesis Research [WI] (2.0 cr)

Interdisciplinary Learning
Select one course from the list:
AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 3575 - Wetlands (3.0 cr)
or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or PLPA 2003 - Plague, Famine, and Beer: The Impact of Microscopic Organisms on Human Civilization [HIS] (3.0 cr)
or GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or HORT 5071 - Ecological Restoration (4.0 cr)
or ESPM 5071 - Ecological Restoration (4.0 cr)

Plant Identification
HORT 4110 - Spring Flowering Bulbs (1.0 cr)
or HORT 4111 - Prairie Perennials and Grasses (1.0 cr)
or HORT 4112 - Flowering Trees and Shrubs (1.0 cr)
or HORT 4113 - Identifying Plants for the Home and Garden: Garden, Annual, and Potted Plants (1.0 cr)
or AGRO 2501 - Plant Identification for Urban and Rural Landscapes (1.0 cr)

Production Systems
HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
or FDSY 2101 - Plant Production Systems (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive (WI) course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)
• HORT 4096W - Professional Experience Program: Internship [WI] (2.0 cr)
• AGRO 4096W - Professional Experience Program: Internships [WI] (2.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Plant Breeding
In consultation with their faculty mentor, students develop a plant breeding track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PiPa designators.

Students interested in this sub-plan for early graduate school admission in plant breeding and genetics should visit plantscience.umn.edu or contact your advisor.

Plant Breeding
Take 24 or more credit(s) from the following:
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- **CHEM 2301** - Organic Chemistry I (3.0 cr)
- **PLPA 2001** - Introductory Plant Pathology (3.0 cr)
- **AGRO 3660** - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
- **GCD 4034** - Molecular Genetics and Genomics (3.0 cr)
- **HORT 4071W** - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
- **AGRO 5021** - Plant Breeding Principles (3.0 cr)
- **AGRO 4505** - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- **HORT 4141W** - Scheduling Crops for Protected Environments [WI] (4.0 cr)
- **HORT 4461** - Horticultural Marketing (3.0 cr)
- **AGRO 2022** - Growth and Development of Minnesota Field Crops (1.0 cr)
- **PLSC 3002** - Seed Science, Technology, and Society (2.0 cr)
- **BIOL 4003** - Genetics (3.0 cr)
- **AGRO 1103** - Crops, Environment, and Society [ENV] (4.0 cr)
- **AGRO 5431** - Applied Plant Genomics and Bioinformatics (3.0 cr)
- **PLPA 5301** - Large Scale Omic Data in Plant Biology (3.0 cr)
- **HORT 5058** - Plant Cytogenetics (3.0 cr)
- **AGRO 5021** - Plant Breeding Principles (3.0 cr)
- **AGRO 5431** - Applied Plant Genomics and Bioinformatics (3.0 cr)
- **PLPA 5301** - Large Scale Omic Data in Plant Biology (3.0 cr)
- **HORT 5058** - Plant Cytogenetics (3.0 cr)
- **CSCI 1913** - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
- **AGRO 2402** - The Science of Cannabis (2.0 cr)

**Directed Study & Directed Research**

**Directed Study**

- HORT 3093 - Directed Study (1.0 - 4.0 cr)
- or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
- or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
- or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
- or PLPA 3993 - Directed Study (1.0 - 4.0 cr)

**Directed Research**

- HORT 3094 - Directed Research (1.0 - 4.0 cr)
- or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
- or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
- or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
- or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

**Agroecology**

In consultation with their faculty mentor, students develop an agroecology track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PlPa designators.

**Agroecology**

Take 24 or more credit(s) from the following:

- **CHEM 1062** - Chemical Principles II [PHYS] (3.0 cr)
- **CHEM 1066** - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- **CHEM 2301** - Organic Chemistry I (3.0 cr)
- **AGRO 4505** - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- **AGRO 3203W** - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- **ENT 3925** - Insects, Aquatic Habitats, and Pollution (3.0 cr)
- **HORT 5071** - Ecological Restoration (4.0 cr)
- **PLPA 2001** - Introductory Plant Pathology (3.0 cr)
- **ESPM 3108** - Ecology of Managed Systems [ENV] (3.0 cr)
- **FNRM 3501** - Arbiculture: Selection and Maintenance of Trees (3.0 cr)
- **AGRO 2022** - Growth and Development of Minnesota Field Crops (1.0 cr)
- **HORT 1014** - Edible Landscape [TS] (3.0 cr)
- **ENT 4251** - Forest and Shade Tree Entomology (3.0 cr)
- **PLPA 3002** - Diseases of Forest and Shade Trees (3.0 cr)
- **AGRO 1103** - Crops, Environment, and Society [ENV] (4.0 cr)
- **AGRO 3305** - Agroecosystems of the world [GP] (3.0 cr)
- **AGRO 3660** - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
- **AGRO 4605** - Strategies for Agricultural Production and Management (3.0 cr)
- **HORT 4071W** - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
- **HORT 1061** - The Sustainable Lawn (3.0 cr)
- **AGRO 2502** - Introduction to Integrated Weed Management (1.0 cr)
- **AGRO 4888** - Issues in Sustainable Agriculture (2.0 cr)
- **EEB 3001** - Ecology and Society [ENV] (3.0 cr)
- **SOIL 4111** - Introduction to Precision Agriculture (3.0 cr)
- **LA 1001** - Sustainability by Design [ENV] (3.0 cr)
- **LA 1201** - Learning from the Landscape [AH, DSJ] (3.0 cr)
**Horticultural Production**

In consultation with their faculty mentor, students develop a horticultural production track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PLPa designators.

**Horticultural Production**

Take 24 or more credit(s) from the following:

- **HORT 3131** - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
- **AGRO 3203W** - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- **AGRO 4505** - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- **AGRO 4888** - Issues in Sustainable Agriculture (2.0 cr)
- **ENT 1005** - Insect Biology with Lab [BIOL] (4.0 cr)
- **PLPA 2001** - Introductory Plant Pathology (3.0 cr)
- **AGRO 4605** - Strategies for Agricultural Production and Management (3.0 cr)
- **HORT 4141W** - Scheduling Crops for Protected Environments [WI] (4.0 cr)
- **HORT 5031** - Fruit Production and Viticulture for Local and Organic Markets (3.0 cr)
- **HORT 5032** - Organic Vegetable Production (3.0 cr)
- **HORT 4461** - Horticultural Marketing (3.0 cr)
- **PLSC 3002** - Seed Science, Technology, and Society (2.0 cr)
- **HORT 1003** - Organic Gardening: From Balconies to Backyards (3.0 cr)
- **HORT 1014** - Edible Landscape [TS] (3.0 cr)
- **HORT 1031** - Vines and Wines: Introduction to Viticulture and Enology (3.0 cr)
- **PLPA 3003** - Diseases of Forest and Shade Trees (3.0 cr)
- **HORT 5012** - Common Medicinal Plants: Growing and Processing (3.0 cr)
- **SOIL 4111** - Introduction to Precision Agriculture (3.0 cr)
- **LAAS 5416** - Precision Agriculture and Nutrient Management (3.0 cr)
- **AGRO 2402** - The Science of Cannabis (2.0 cr)
- **SOIL 3416** - Plant Nutrients in the Environment (3.0 cr)
  or **ESPM 3612W** - Soil and Environmental Biology [WI] (4.0 cr)

**Directed Study & Directed Research**

**Directed Study**

- **HORT 3093** - Directed Study (1.0 - 4.0 cr)
  or **AGRO 3093** - Directed Study (1.0 - 4.0 cr)
  or **PLSC 3093** - Directed Study (1.0 - 4.0 cr)
  or **FDSY 3093** - Directed Study (1.0 - 4.0 cr)
  or **PLPA 3993** - Directed Study (1.0 - 4.0 cr)

**Directed Research**

- **HORT 3094** - Directed Research (1.0 - 4.0 cr)
  or **AGRO 3094** - Directed Research (1.0 - 4.0 cr)
  or **PLSC 3094** - Directed Research (1.0 - 4.0 cr)
  or **FDSY 3094** - Directed Research (1.0 - 4.0 cr)
  or **ENT 3294** - Directed Research in Entomology (1.0 - 4.0 cr)
Nursery & Floriculture
In consultation with their faculty mentor, students develop a nursery & floriculture track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PlPa designators.

**Nursery & Floriculture**
Take 24 or more credit(s) from the following:
- HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
- HORT 5031 - Fruit Production and Viticulture for Local and Organic Markets (3.0 cr)
- FNRM 3501 - Arboriculture: Selection and Maintenance of Trees (3.0 cr)
- PLPA 2001 - Introductory Plant Pathology (3.0 cr)
- HORT 5023 - Public Garden Management (2.0 cr)
- HORT 4461 - Horticultural Marketing (3.0 cr)
- HORT 1113 - Floral Design (3.0 cr)
- AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
- HORT 1003 - Organic Gardening: From Balconies to Backyards (3.0 cr)
- HORT 1014 - Edible Landscape [TS] (3.0 cr)
- HORT 1031 - Vines and Wines: Introduction to Viticulture and Enology (3.0 cr)
- ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
- PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
- HORT 5012 - Common Medicinal Plants: Growing and Processing (3.0 cr)
- LA 1201 - Learning from the Landscape [AH, DSJ] (3.0 cr)
- LA 1301 - Introduction to Landscape Architecture Drawing [AH] (3.0 cr)
- LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
- AGRO 2402 - The Science of Cannabis (2.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
or ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)

**Directed Study & Directed Research**

**Directed Study**
- HORT 3093 - Directed Study (1.0 - 4.0 cr)
or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
or PLPA 3993 - Directed Study (1.0 - 4.0 cr)

**Directed Research**
- HORT 3094 - Directed Research (1.0 - 4.0 cr)
or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

Turfgrass Science
In consultation with their faculty mentor, students develop a turfgrass science track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PlPa designators.

**Turfgrass Science**
Take 24 or more credit(s) from the following:
- HORT 4061W - Turfgrass Management [WI] (3.0 cr)
- HORT 4062 - Turfgrass Weed and Disease Science (3.0 cr)
- HORT 4063 - Turfgrass Science (3.0 cr)
- PLPA 2001 - Introductory Plant Pathology (3.0 cr)
- AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
- HORT 1061 - The Sustainable Lawn (3.0 cr)
- SOIL 4111 - Introduction to Precision Agriculture (3.0 cr)
- PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
- LA 1201 - Learning from the Landscape [AH, DSJ] (3.0 cr)
- LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
- AGRO 2402 - The Science of Cannabis (2.0 cr)

**Directed Study & Directed Research**

**Directed Study**
HORT 3093 - Directed Study (1.0 - 4.0 cr)
or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
or PLPA 3993 - Directed Study (1.0 - 4.0 cr)

or Directed Research
HORT 3094 - Directed Research (1.0 - 4.0 cr)
or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

Sustainable Plant Health
In consultation with their faculty mentor, students develop a sustainable plant health track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PlPa designators.

Sustainable Plant Health
Take 24 or more credit(s) from the following:
- ENT 1005 - Insect Biology with Lab [BIOL] (4.0 cr)
- PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
- AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
- PLPA 5660 - Plant Disease Resistance and Applications (3.0 cr)
- ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
- HORT 1014 - Edible Landscape [TS] (3.0 cr)
- ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
- HORT 1061 - The Sustainable Lawn (3.0 cr)
- AGRO 2502 - Introduction to Integrated Weed Management (1.0 cr)
- LA 1001 - Sustainability by Design [ENV] (3.0 cr)
- LA 1201 - Learning from the Landscape [AH, DSJ] (3.0 cr)
- LA 1401 - The Designed Environment [AH] (3.0 cr)
- LA 3003 - Climate Change Adaptation (3.0 cr)
- LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
- SOIL 4111 - Introduction to Precision Agriculture (3.0 cr)
- LAAS 5416 - Precision Agriculture and Nutrient Management (3.0 cr)
- AGRO 2402 - The Science of Cannabis (2.0 cr)
- PLPA 2001 - Introductory Plant Pathology (3.0 cr)
or PLPA 5480 - Principles of Plant Pathology (3.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
or ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)

Directed Study & Directed Research
Directed Study
HORT 3093 - Directed Study (1.0 - 4.0 cr)
or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
or PLPA 3993 - Directed Study (1.0 - 4.0 cr)

or Directed Research
HORT 3094 - Directed Research (1.0 - 4.0 cr)
or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)

Agronomy Production
In consultation with their faculty mentor, students develop an agronomy production track consisting of at least 24 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 24 credits, students need to take a minimum of 12 credits of Agro, Ent, Hort, PLSC, or PlPa designators.

Agronomy Production
Take 24 or more credit(s) from the following:
- AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
- AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
- AGRO 4605 - Strategies for Agricultural Production and Management (3.0 cr)
Integrated Plant Science BS/MS Applied Plant Science - Plant Breeding

Sub-plan catalog description: CFANS offers an integrated bachelor of science (BS) in plant science and master's of science (MS) in applied plant sciences (plant breeding and molecular genetics track). The integrated BS/MS program offers students the opportunity to earn both degrees in five years by working toward a master's degree while simultaneously working toward their undergraduate degree. Plant science undergraduate students in the plant breeding and genetics sub-plan are welcome to apply to this program during their 3rd year of undergraduate study. During the 4th year, students take undergraduate and graduate courses concurrently and are advised by an undergraduate and graduate program advisor. Students must complete undergraduate degree requirements before the end of their fourth year.

If the student does not pursue or complete the applied plant sciences MS degree portion of the integrated plant science BS/MS applied plant science - plant breeding track, their sub-plan will revert to plant breeding.

Students in this program will complete the 120 undergraduate credits required for a BS degree in plant science by the end of the 4th year and must be awarded an undergraduate degree at the 4th year mark or earlier. During the 4th and 5th years, student will complete 30 graduate credits and a Plan A or B research project with a final oral defense as required for the applied plant sciences MS degree. Student cannot double count credits to meet credit requirements for both the undergraduate and graduate degrees.

Chemistry

These 3 chemistry courses are required:
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)

Electives

Take 17 or more credit(s) from the following:
• AGRO 3660 - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
• AGRO 4888 - Issues in Sustainable Agriculture (2.0 cr)
• AGRO 5021 - Plant Breeding Principles (3.0 cr)
• AGRO 5431 - Applied Plant Genomics and Bioinformatics (3.0 cr)
• EEB 5042 - Quantitative Genetics (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• HORT 4071W - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
• HORT 5058 - Plant Cytogenetics (3.0 cr)
• PLPA 2001 - Introductory Plant Pathology (3.0 cr)
• PLPA 5301 - Large Scale Omic Data in Plant Biology (3.0 cr)
• CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
• AGRO 2402 - The Science of Cannabis (2.0 cr)
• Directed Studies & Directed Research
  Directed Study
  HORT 3093 - Directed Study (1.0 - 4.0 cr)
  or AGRO 3093 - Directed Study (1.0 - 4.0 cr)
  or PLSC 3093 - Directed Study (1.0 - 4.0 cr)
  or FDSY 3093 - Directed Study (1.0 - 4.0 cr)
  or PLPA 3993 - Directed Study (1.0 - 4.0 cr)

  or Directed Research
  HORT 3094 - Directed Research (1.0 - 4.0 cr)
  or AGRO 3094 - Directed Research (1.0 - 4.0 cr)
  or PLSC 3094 - Directed Research (1.0 - 4.0 cr)
  or FDSY 3094 - Directed Research (1.0 - 4.0 cr)
  or ENT 3294 - Directed Research in Entomology (1.0 - 4.0 cr)
Twin Cities Campus

Soil Science Minor

Soil, Water, & Climate
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 21 to 23
- This program requires summer terms.

This minor provides a strong background in basic soil sciences, covering such topics in conservation and land use management, soil chemistry and fertility, soil physics and hydrology, and soil genesis and morphology. Students completing the minor meet the minimum requirements for employment with the Natural Resources Conservation Service as a soil conservationist. They are also prepared to take the Fundamentals of Soil Science - Professional Soils Scientist in-Training Examination.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
- ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
- SOIL 4511 - Field Study of Soils (2.0 cr)
- ESPM 3131 - Environmental Physics (3.0 cr)
  - or ESPM 4216 - Contaminant Hydrology (3.0 cr)
  - or FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
  - or LAAS 5311 - Soil Chemistry and Mineralogy (3.0 cr)

Electives
- 2 credit minimum; alternate courses listed above may be included as electives.
- SOIL 3521 - Soil Judging (1.0 cr)
  - or SOIL 3993 - Directed Study (1.0 - 4.0 cr)
  - or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
  - or ESPM 4601 - Environmental Pollution (3.0 cr)
  - or SOIL 5232 - Vadose Zone Hydrology (3.0 cr)
  - or LAAS 5515 - Soil Formation: Earth Surface Processes and Biogeochemistry (3.0 cr)
  - or FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
  - or ESPM 5555 - Wetland Soils (3.0 cr)
  - or SOIL 5555 - Wetland Soils (3.0 cr)
Twin Cities Campus

Sustainability Studies Minor
College of Food, Agri & Natural Resource Sciences

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 18
- NA

One of the greatest challenges facing the 21st-century world is jointly sustaining the environment, as well as human health and well-being. The sustainability studies minor provides students from across the University with a unique opportunity to address this sustainability challenge. Students will explore the fundamental ecological, social, ethical, political, and economic forces that influence the long-term quality and viability of human society and the natural environment. The introductory core course provides a conceptual overview of various models for understanding sustainability, and uses case studies to demonstrate the challenges of putting sustainability into practice. Additional electives are chosen from courses that explore multiple disciplinary perspectives related to sustainability. Finally, the capstone experience allows students to synthesize and apply their knowledge to real sustainability problems.

For this minor, students must complete 6 credits of required courses for the core and the capstone, and 9-12 restricted electives, for a total of 15-18 credits. Study abroad courses may count for up to 6 credits. One course may be taken at the 1000 or 2000 level. One course may be taken online.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Core
SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
SUST 4004 - Sustainable Communities (3.0 cr)

Electives
Take three courses, not more than one from each of four categories. You may also petition for study abroad, summer, special topics, new, and other courses to count toward elective requirements. You may complete up to one online course as an elective. You may complete up to one 1xxx or 2xxx level elective, pending approval from the minor advisor or coordinator.
Take 3 or more course(s) from the following:

Economics and Policy
Take no more than 1 course(s) from the following:
• ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• BBEB 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3602 - Environmental Life Cycle Analysis (3.0 cr)
• ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
• ESPM 3621 - Methods for Environmental and Natural Resource Policy Analysis (3.0 cr)
• ESPM 3622 - Regulations and Corporate Environmental Management (3.0 cr)
• GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
• GCC 3011 - Pathways to Renewable Energy [TS] (3.0 cr)
• GCC 3017 - World Food Problems: Agronomy, Economics and Hunger [GP] (3.0 cr)
• GCC 3008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• GCC 3017 - World Food Problems: Agronomy, Economics and Hunger [GP] (3.0 cr)
• PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
• SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
• SSM 3301 - Global Water Resource Use and Sustainability [ENV] (3.0 cr)
•Social Science and Humanities
Take no more than 1 course(s) from the following:
• ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
• COMM 4251 - Environmental Communication [ENV] (3.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• GCC 3013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
• GCC 3024 - 11 Billion People: How long can the planet sustain humanity? [ENV] (3.0 cr)
• GCC 3025 - Living the Good Life at the End of the World: Sustainability in the Anthropocene [CIV] (3.0 cr)
• GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
• GCC 5013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
• GCC 5024 - 11 Billion People: How long can the planet sustain humanity? [ENV] (3.0 cr)
• GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GER 3651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
• GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GLOS 3613W - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change (4.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
• SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SUST 3017 - Environmental Justice [DSJ] (3.0 cr)

•Biophysical Sciences
Take no more than 1 course(s) from the following:
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• AGRO 5321 - Ecology of Agricultural Systems (3.0 cr)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• BIOL 1052 - Environmental Biology: Science and Solutions [ENV] (3.0 cr)
• BIOL 1055 - Environmental Biology: Science and Solutions with Laboratory [BIOL, ENV] (4.0 cr)
• CHEM 4601 - Green Chemistry [ENV] (3.0 cr)
• EEB 3001 - Ecology and Society [ENV] (3.0 cr)
• EEB 3407 - Ecology (3.0 cr)
• EEB 3409W - Ecology [WI] (4.0 cr)
• EEB 3534 - Biodiversity Science: The origins, maintenance, consequences, detection & assessment of biodiversity [ENV] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 5534 - Biodiversity Sci: The origins, maintenance, consequences, detection and assessment of biodiversity [ENV] (3.0 cr)
• ESCI 3005 - Earth Resources (3.0 cr)
• ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
• ESCI 5402 - Science and Politics of Global Warming (3.0 cr)
• ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• FNRM 3101 - Park and Protected Area Tourism (3.0 cr)
• FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
• GCC 5032 - Ecosystem Health: Leadership at the Intersection of Humans, Animals, and the Environment [ENV] (3.0 cr)
• GECO 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• GECO 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Climate & Environment Justice (4.0 cr)
• HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)

•Design and Technology
Take no more than 1 course(s) from the following:
• ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
• BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
• BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
• CEGE 4011 - Special Topics (1.0 - 4.0 cr)
• CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
• EE 1701 - Climate Crisis: Implementing Solutions [TS] (3.0 cr)
• ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
• GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• GCC 5005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• GCC 5501 - Knowledge to Impact: Creating Action with Your Grand Challenge Project Idea (3.0 cr)
• LA 1001 - Sustainability by Design [ENV] (3.0 cr)
• LA 3003 - Climate Change Adaptation (3.0 cr)
• LA 3004 - Regional Environmental Landscape Planning (4.0 cr)
• LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
• LA 3514 - Making the Mississippi [CIV] (3.0 cr)
• LA 4755 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)
• LA 5514 - Making the Mississippi (3.0 cr)
• PA 5743 - Social Innovation Design Lab: Making Your Idea a Reality (1.5 cr)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• GCC 3027 - Power Systems Journey: Making the Invisible Visible and Actionable [TS] (3.0 cr)
• GCC 5027 - Power Systems Journey: Making the Invisible Visible and Actionable [TS] (3.0 cr)
Twin Cities Campus
Sustainable Agriculture Minor
Agronomy & Plant Genetics, College of Food, Agri & Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 18

This minor allows students to study the sustainability of agricultural food systems from an integrated perspective, including coursework, practical experience, and community reflection. Required courses and courses from the foundational clusters land and public policy; agriculture, environment, and natural resources; and citizens, science, and society define the student’s minor curriculum. In addition, each student works with a minor adviser to design an individualized practical experience (e.g., internship, experiential learning opportunity) in some aspect of sustainable agriculture. Through the Issues in Sustainable Agriculture course, students synthesize their learning about sustainability for local, national, and global agricultural food systems. For this minor, students must complete 3-6 credits of required courses and 9-14 credits of foundational coursework, for a total of at least 17 credits.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
- AGRO 4888 - Issues in Sustainable Agriculture (2.0 cr)
- Take 1-3 credit(s) of SAGR 4096 or an equivalent internship course
- SAGR 4096 - Professional Experience Program: Internship in Sustainable Agriculture (1.0 - 3.0 cr)

Foundation Course Clusters
Select at least one course from each of the following clusters. Other courses may be substituted with approval of the minor advisor and coordinator.
- Take 12 or more credit(s) including 3 or more sub-requirements(s) from the following:
  - Land and Public Policy
    - ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
    - ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
    - ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
    - GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
    - PA 5002 - Introduction to Policy Analysis (1.5 cr)
    - WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
  - Agriculture/Environment and Natural Resources
    - AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
    - AGRO 5999 - Special Topics: Workshop in Agronomy (1.0 - 6.0 cr)
    - ANSC 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
    - ANSC 1101 - Introductory Animal Science (4.0 cr)
    - APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
    - APEC 3811 - Principles of Farm Management (3.0 cr)
    - APS 5103 - Integration of Sustainable Agriculture Concepts (3.0 cr)
    - EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
    - ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
    - ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
    - ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
    - ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
    - GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
    - HORT 1014 - Edible Landscape [TS] (3.0 cr)
    - HORT 5131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
    - HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Climate & Environment Justice (4.0 cr)
    - PLPA 2001 - Introductory Plant Pathology (3.0 cr)
    - SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
    - AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
    - ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
Citizens/Science and Society

- BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
- CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- ENGL 3071 - The American Food Revolution in Literature and Television [CIV] (3.0 cr)
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
- GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
- HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change (4.0 cr)
- SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
- WRIT 3371W - Technology, Self, and Society [TS, WI] (3.0 cr)
- GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
Twin Cities Campus

Sustainable Systems Management B.S.
Bioproducts and Biosystems Engineering
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 84 to 91
- Degree: Bachelor of Science

Businesses, governments, and nonprofit organizations are making decisions with sustainability in mind with increasing frequency. They recognize that to ensure positive environmental, economic, and social outcomes, they must prepare comprehensive, long-term plans and employ informed, proficient individuals to carry them out. To accomplish these tasks, these public and private entities rely upon the expertise of employees and consultants who possess both a broad understanding of sustainability and an in-depth familiarity with the particular sector in which they operate.

The sustainable systems management major prepares students to enter the workforce with the knowledge and skills necessary to design, assess, implement, and manage systems to advance the goals of sustainability. Key features of this inherently interdisciplinary major include its skills-based and content-based integrated core courses, its emphasis on the development of strong analytical and quantitative skill sets, and its broad requirement of foundation courses in mathematics, science, business, economics, history, and policy.

Students choose to specialize in one of four tracks: (1) corporate sustainability systems, (2) sustainable products business management, (3) building science and technology, or (4) energy systems.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 23 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Core and Foundation Courses
Orientation
SSM 1004 - Sustainable Systems Management Orientation (1.0 cr)

Mathematical Thinking
MATH 1271 - Calculus I [MATH] (4.0 cr)

Statistics
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)

Physical and Biological Sciences
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

Biology
BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)
Social Sciences and Historical Perspective
ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
or HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)

Economics
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)

Skills Based Integrated Core
ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)
or HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)

Intro to Systems Thinking
ESPM 2021 meets the Interdisciplinary Learning requirement
SSM 4506W - Sustainable Systems Management Capstone [WI] (3.0 cr)
or ESPM 3261 - Economics and Natural Resources Management (4.0 cr)

Content Based Integrated Core
SSM 4407W meets the Interdisciplinary Learning requirement
SSM 4504W meets the Experiential Learning requirement
SSM 4506W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
- SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
- SSM 4506W - Sustainable Systems Management Capstone [WI] (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Sustainable Products Business Management
The sustainable products business management sub-plan combines science, engineering, technology, and business coursework with cutting-edge research related to sustainable product development, business management, and their applications. This specialization prepares students to enter the workforce with the knowledge and skills necessary to design, assess, implement, and manage business systems to advance the goals of sustainable products and technologies, and bring them closer to consumers.

Additional Foundation Courses
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
APEC 1102 - Principles of Macroeconomics (3.0 cr)
or ECON 1102 - Principles of Macroeconomics (4.0 cr)

Sustainable Products Business Mgmt Specialization Courses
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
MGMT 3001 - Fundamentals of Management (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
BBE 1002 - Biorenewable Resources [TS] (3.0 cr)
BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
SSM 3503 - Marketing of Bio-based Products (4.0 cr)
BBE 4302 - Biodegradation of Bioproducts (3.0 cr)
ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)

Building Science and Technology
The building science and technology sub-plan is designed to investigate and enrich the important relationships between people, their homes, and the environment. From a solid scientific and engineering base, this interdisciplinary specialization builds critical thinking skills and helps students explore the opportunities that can enhance the performance of houses and building systems.

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Information current as of September 02, 2020
Additional Foundation Courses
MATH 1272 - Calculus II (4.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)

Building Science and Technology Specialization Courses
BBE 1002 - Biorenewable Resources [TS] (3.0 cr)
BBE 2001 - Mechanics and Structural Design (4.0 cr)
BBE 4302 - Biodegradation of Bioproducts (3.0 cr)
SSM 4413 - Systems Approach to Residential Construction (4.0 cr)
SSM 4414 - Advanced Residential Building Science (4.0 cr)
SSM 4416 - Building Testing and Diagnostics (2.0 cr)
SSM 4418 - Advanced Building Science: Applications (3.0 cr)
CEGE 3402 - Civil Engineering Materials (3.0 cr)
CMGT 3011 - Construction Plan Reading (2.0 cr)
CMGT 4021 - Construction Planning and Scheduling (3.0 cr)

Corporate Sustainability Systems
The corporate sustainability systems sub-plan specialization prepares students to enter the workforce with the knowledge and skills necessary to design, assess, implement, and manage systems to advance the goals of sustainability within a business, industrial, corporate, and non-profit organization context.

Additional Foundation Courses
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
MATH 1272 - Calculus II (4.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
APEC 1102 - Principles of Macroeconomics (3.0 cr)
or ECON 1102 - Principles of Macroeconomics (4.0 cr)

Corporate Sustainability Systems Specialization Courses
APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
MGMT 3001 - Fundamentals of Management (3.0 cr)
APEC 1251 - Principles of Accounting (3.0 cr)
or ACCT 2050 - Introduction to Financial Reporting (4.0 cr)

Energy Systems
The energy systems sub-plan specialization combines science, engineering, technology, and systems thinking coursework with cutting-edge research related to sustainable energy systems and their applications. This specialization prepares students to enter the workforce with the knowledge and skills necessary to design, assess, implement, and manage energy systems to advance the goals of sustainability.

Additional Foundation Courses
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
MATH 1272 - Calculus II (4.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)

Energy Systems Specialization Courses
APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
BBE 3033 - Material and Energy Balances in Biological Systems (3.0 cr)
BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
BBE 3043 - Biological and Environmental Thermodynamics (3.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

Integrated B.S. Sustainable Systems Management/M.S. Bioproducts & Biosystems Science, Eng & Mgmt
This sub-plan is optional and does not fulfill the sub-plan requirement for this program.
The College of Food, Agricultural and Natural Resource Sciences offers an integrated Bachelors and Masters Degree program. This program allows students to complete their undergraduate and graduate degrees in five years. Applicants must be enrolled students in the Sustainable Systems Management undergraduate program at the University of Minnesota Twin Cities. Applicants must have a minimum GPA of 3.3 and have a strong recommendation from an SSM faculty member or instructor. Full application instructions can be found at: bbe.umn.edu/integrated

Students admitted to the Integrated Bachelors and Masters Program in SSM will complete and be awarded an undergraduate degree within 4 years. Students will complete a minimum of one year as a graduate student before completing masters program requirements. Students in SSM must be within 32 credits of completing their undergraduate degree requirements, have a faculty advisor identified and have cumulative GPA of 3.3 or higher. A minimum of 14 credit hours need to be taken after the completion of their undergraduate degree. The following required courses should be taken as an undergraduate integrated program student: BBE 8001 - Seminar I, BBE 8002 - Seminar II, and BBE 8013 - Parameter Estimation. Please refer to the SSM webpage for more information about the BBSEM graduate program.

**Required Courses**

- **BBE 8001** - Seminar I (1.0 cr)
- **BBE 8002** - Seminar II (1.0 cr)
- **BBE 8013** - Parameter Estimation in Biosystems and Agricultural Engineering (3.0 cr)
Twin Cities Campus
Urban and Community Forestry Minor
Forest Resources
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 19 to 21

The urban and community forestry minor enables students in programs such as education, landscape architecture, horticultural sciences, natural resources, and related areas such as urban planning to understand the science and practice underlying the management of urban and community forests. The minor incorporates fundamental science, arboriculture, forest health, and resource management coursework.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
or PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
FNRM 3501 - Arboriculture: Selection and Maintenance of Trees (3.0 cr)
FNRM 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)

Electives
Take 10 or more credit(s) from the following:
- ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
- FNRM 3218 - Measuring and Modeling Forests (3.0 cr)
- HORT 1015 - Woody and Herbaceous Plants (4.0 cr)
- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- Introductory Cloquet Field Session

NOTE: These classes take place in August at the Cloquet Forestry Station, Cloquet, MN. FNRM 2101 AND 2104 are summer registration. FNRM 2102 is fall registration.
Take 0 - 4 credit(s) from the following:
- FNRM 2101 - Identifying Forest Plants (1.0 cr)
- FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
- FNRM 2104 - Measuring Forest Resources (1.0 cr)
Twin Cities Campus
Water Science Minor
Soil, Water, & Climate
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 20

Increasing pressures from population growth, climate change, and other human activities are severely impacting the quality and quantity of water on a global basis. Tomorrow's scientists will require a keen understanding of factors pertaining to the biology, chemistry, hydrology, and scarcity of our water resources. The minor provides students the opportunity to broaden their expertise in the area of water science. Students must complete at least 18 credits for the minor.

Note: Students interested in qualifying as a hydrologist should determine the exact requirements for the Minnesota civil service position by checking the Hydrologist I (Hydrogeology) and Hydrologist I (Water Resources) position descriptions.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
ESPM 4216 - Contaminant Hydrology (3.0 cr)
-or ESPM 4702 - General Hydrogeology (4.0 cr)
SOIL 5232 - Vadose Zone Hydrology (3.0 cr)
-or SOIL 5555 - Wetland Soils (3.0 cr)
-or ESPM 5555 - Wetland Soils (3.0 cr)

Electives
Courses used to fulfill requirements above cannot be chosen to fulfill electives.
Take 9 or more credit(s) from the following:
-Wetlands
Take at most 6 credit(s) from the following:
• ESPM 3575 - Wetlands (3.0 cr)
• SOIL 5555 - Wetland Soils (3.0 cr)
-or ESPM 5555 - Wetland Soils (3.0 cr)

-Hydrology
Take at most 9 credit(s) from the following:
• FNRM 5153 - Forest Hydrology & Watershed Biogeochemistry (3.0 cr)
• SOIL 5232 - Vadose Zone Hydrology (3.0 cr)
• ESCI 4702 - General Hydrogeology (4.0 cr)

-Water Quality and Limnology
Take at most 9 credit(s) from the following:
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• ESPM 4601 - Environmental Pollution (3.0 cr)
• EEB 5601 - Limnology (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• PUBH 6190 - Environmental Chemistry (3.0 cr)

-Conservation and Urban Systems
Take at most 3 credit(s) from the following:
• ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
Twin Cities Campus
Wildlife Care and Handling
Fisheries, Wildlife, and Conservation Biology
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 19 to 23
- The capstone of the curriculum is an externship, FW 4625, a resident, professional experience in which students work hands-on with wild animals. Animal care in this sense might include wildlife research focused on capture and handling, rehabilitation, or permanently- or temporarily-captive wild animals. The residency might mean that students are working in a facility (e.g., zoo, nature center, sanctuary, rehabilitation facility, rescue center, wildlife care facility) or might mean that the student travels to provide care (e.g., working with a DNR wildlife field crew). The externship must provide hands-on experience with care and handling of wild animals, and must involve at least some understanding of the mission and overall operation of the facility or organization. The externship takes place in a wildlife handling facility off-campus; that might be in Minnesota or many other places in the world.

This minor enables students to develop an understanding of wildlife care and handling. It will be especially attractive to students in programs such as wildlife, animal science, biology, natural resources, and environmental studies. Students become acquainted with diagnosis, animal handling, ethics, and population-level concerns of animal care. Any direct involvement with medical care will be under the supervision of a licensed veterinarian. Students interested in the minor should declare through the CFANS Student Services Office.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Basic biology is a prerequisite for courses in the minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Prerequisites
BIOL 1009 - General Biology [BIOL] (4.0 cr)
or
Subgroup 0
BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
or
Subgroup 1
BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

Minor Requirements

Core program
Three courses are required (9 credits).
VPM 2400 - Managed Captive Wildlife (3.0 cr)
FW 4629 - Wildlife Care and Handling Externship (3.0 cr)
FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
or
FW 4103 - Principles of Wildlife Management (3.0 cr)

Animal Course
Take 3 or more credit(s) from the following:
- ANSC 2401 - Animal Nutrition (3.0 cr)
- EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- VBS 2100 - Companion Animal Anatomy (3.0 cr)
- VCS 4606 - Small Animal Management (3.0 cr)
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
or
EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)

Advanced Course
Take 3 or more credit(s) from the following:

- FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)
- VPM 2451 - Introductory Concepts in Raptor Rehabilitation (1.0 cr)
- VPM 4400 - Diseases in free-ranging and captive wildlife (3.0 cr)

**Wildlife handling**

An approved professional training course in wildlife care and handling may be substituted for FW 5625 and 1 credit of Directed Study Wildlife (FW 3393/5393). Substitutions are approved by petition. To qualify for approval, a training course must include at least 30 hours of instruction in a field setting, and at least one third of the instruction must be hands-on. A wide range of such professional courses is available. Contact the minor coordinator for guidance.

- FW 5625 - Wildlife Handling and Immobilization for Research and Management (2.0 cr)

**Directed Study: Wildlife**

FW 3393 - Directed Study Wildlife (1.0 - 4.0 cr)

or FW 5393 - Directed Study Wildlife (1.0 - 4.0 cr)
Twin Cities Campus

Acting B.F.A.

Theatre Arts & Dance Dept

College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 86 to 91
• Degree: Bachelor of Fine Arts

The University of Minnesota/Guthrie Theater BFA Actor Training Program provides students with a holistic liberal arts education paired with rigorous professional actor training. In a unique partnership between the University of Minnesota and the Guthrie Theater, students benefit from outstanding academic preparation and world-class artistic experiences.

This program is designed to develop actors in both mind and body. We provide our students with the essential skills for exploring text in performance through layers of classic text exploration and contemporary literature. This training includes integration of voice, movement, and acting within a within a range of styles.

The combination of experiences within both the University of Minnesota and at the Guthrie Theater offers students a deeper understanding of the performing arts community within todays landscape.

We see students from diverse backgrounds and experiences who are:
- Serious about pursuing acting as a profession
- Curious and inquisitive
- Willing to take risks
- Interested in artistic exploration individually and as an ensemble

We embrace the continual development of the artists distinctive voice and encourage students to design their individual paths towards artistic fulfillment.

Program Delivery

This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements

Entry into the BFA acting program is by audition only, and students are admitted only in fall semester.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Students may earn no more than one undergraduate degree from the theatre arts program: a BA in theatre arts, or a BFA in acting, or a minor in theatre arts.

At least 28 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus. This includes learning abroad courses taken for resident credit.

All Acting BFA students participate in the London Study Abroad program during the Fall semester of their junior year. The courses taken in London are included in these requirements.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

New Voices

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The University of Minnesota is an equal opportunity educator and employer.
Information current as of September 02, 2020
Take exactly 1 course(s) totaling 1 credit(s) from the following:
• TH 1381 - New Voices (1.0 cr)

Acting
Take exactly 5 course(s) totaling 15 credit(s) from the following:
• TH 1391 - BFA Acting I (3.0 cr)
• TH 1395 - BFA Acting II (3.0 cr)
• TH 2391 - BFA Acting III (3.0 cr)
• TH 2395 - BFA Acting IV (3.0 cr)
• TH 3391 - BFA Acting V (3.0 cr)

Voice and Speech
Take exactly 5 course(s) totaling 10 credit(s) from the following:
• TH 1392 - BFA Voice and Speech I (2.0 cr)
• TH 1396 - BFA Voice and Speech II (2.0 cr)
• TH 2392 - BFA Voice and Speech III (2.0 cr)
• TH 2396 - BFA Voice and Speech IV (2.0 cr)
• TH 3392 - BFA Voice and Speech V (2.0 cr)

Movement
Take exactly 5 course(s) totaling 10 credit(s) from the following:
• TH 1393 - BFA Movement I (2.0 cr)
• TH 1397 - BFA Movement II (2.0 cr)
• TH 2393 - BFA Movement III (2.0 cr)
• TH 2397 - BFA Movement IV (2.0 cr)
• TH 3393 - BFA Movement V (2.0 cr)

Design and Technology
Take exactly 2 course(s) totaling 6 credit(s) from the following:
• TH 1501 - Introduction to Design and Technology for Live Performance (3.0 cr)
• TH 3521 - Introduction to Scenic Design for Theater and Performance (3.0 cr)
or TH 3531 - Introduction to Theatrical Costume Design (3.0 cr)
or TH 3541 - Introduction to Stage Lighting Design (3.0 cr)
or TH 3571 - Introduction to Stage Technology (3.0 cr)

Makeup
Take exactly 1 course(s) totaling 2 credit(s) from the following:
• TH 4532 - Makeup for the Actor (2.0 cr)

Intensive
Take exactly 3 course(s) totaling 6 credit(s) from the following:
• TH 3395 - BFA Intensive I (2.0 cr)
• TH 4391 - BFA Intensive II (2.0 cr)
• TH 4395 - BFA Intensive III (2.0 cr)

Rehearsal and Performance
Take exactly 5 course(s) totaling 10 credit(s) from the following:
• TH 3398 - BFA Rehearsal & Performance I (2.0 cr)
• TH 3399 - BFA Rehearsal and Performance II (2.0 cr)
• TH 4393 - BFA Rehearsal and Performance III (2.0 cr)
• TH 4394 - BFA Rehearsal and Performance IV (2.0 cr)
• TH 4399 - BFA Rehearsal and Performance VI (2.0 cr)

Shakespeare
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• ENGL 1181W - Introduction to Shakespeare [LITR, WI] (4.0 cr)
or ENGL 3007 - Shakespeare [LITR] (3.0 cr)
or ENGL 3007H - Honors: Shakespeare [LITR] (3.0 cr)

History of the Theatre
Take exactly 3 course(s) totaling 9 credit(s) from the following:
• TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
• TH 3172 - History of the Theatre: Age of Enlightenment to Present (3.0 cr)
• LNDN 3523 - Theatricality: Understanding the Possibilities in Theater (3.0 cr)
Theatre Literature
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• TH 3314 - Text and the Actor (3.0 cr)
• TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
• TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
• TH 5181W - Blacks in American Theatre [WI] (3.0 cr)

Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

London Elective
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• LNDN 3210 - Historical Backgrounds of English Literature (3.0 cr)
• LNDN 3211 - Terror and the Witch: Fictions of Witchcraft from Shakespeare to Harry Potter (3.0 cr)
• LNDN 3212W - Travel Writing: Topics in Composition [WI] (3.0 cr)
• LNDN 3213 - 20th and 21st Century Art (3.0 cr)
• LNDN 3215 - British Theatre Now and Then (3.0 cr)
• LNDN 3217W - Writing the City: London [WI] (3.0 cr)
• LNDN 3218 - Contemporary British Film (3.0 cr)
• LNDN 3219 - London Across History, Literature and Film (3.0 cr)
• LNDN 3220W - Contemporary World Architecture in London [WI] (3.0 cr)
• LNDN 3221W - Writing a Play [WI] (3.0 cr)
• LNDN 3222 - Detective Fiction: Crime and the City (3.0 cr)
• LNDN 3223 - Special Studies in Economics: Globalization Studies (3.0 cr)
• LNDN 3226 - Religion in Modern Britain: A Comparative Perspective (3.0 cr)
• LNDN 3230 - The Aesthetics of Power, Prestige and Social Change: A Survey of Renaissance through Modern Art Hist (3.0 cr)
• LNDN 3232 - Modern Art in London: From the Sublime to the Ridiculous (3.0 cr)
• LNDN 3233 - Queer Studies and LGBTQ Life in London and the Global World (3.0 cr)
• LNDN 3235 - Witchcraft and Magical Performance in London (3.0 cr)
• LNDN 3236 - The Law of Wrongful Convictions (3.0 cr)
• LNDN 3237 - International Comparative Studies of Issues Impacting Education Systems (3.0 cr)
• LNDN 3238 - Literature and the Environment (3.0 cr)
• LNDN 3239 - Theatre in the City (3.0 cr)
• LNDN 3242 - Global Perspectives on Human Rights in Action (3.0 cr)
• LNDN 3243 - London Museums: Introduction to British Museology, Society and Culture (3.0 cr)
• LNDN 3245 - Comparative Health Systems (3.0 cr)
• LNDN 3249W - Experiencing Globalization: Society, Space and Everyday Life in London [SOCS, CIV, WI] (3.0 cr)
• LNDN 3253W - Contemporary Issues through Community Engagement: Social Dynamics of London [CIV, GP, WI] (3.0 cr)
• LNDN 3254W - Introduction to Science Fiction [LITR, WI] (3.0 cr)
• LNDN 3255 - Moving Images Editing: Theory and Practice [AH] (3.0 cr)
• LNDN 3256 - Digital Media Practice (3.0 cr)
• LNDN 3323 - Shakespeare in London (3.0 cr)
• LNDN 3324 - 20th Century British Fiction (3.0 cr)
• LNDN 3328 - British Cinema (3.0 cr)
• LNDN 3333 - Understanding Modern Britain (3.0 cr)
• LNDN 3342 - European Economic History (3.0 cr)
• LNDN 3343W - Post War Popular Culture [WI] (3.0 cr)
• LNDN 3342 - Western European Government and Politics (3.0 cr)
• LNDN 3500 - CAPA Seminar in London (3.0 cr)
• LNDN 3530 - Ethical Issues and the Media (3.0 cr)
• LNDN 3531 - Advertising and Marketing in Britain (3.0 cr)
• LNDN 3532 - Visualizing Britain: Film and Television Documentaries (3.0 cr)
• LNDN 3533 - Women in Britain in the 21st Century (3.0 cr)
• LNDN 3534 - Criminal London: Aspects of Crime and Criminal Justice in Britain (3.0 cr)
• LNDN 3536 - Child Development in a British Context (3.0 cr)
• LNDN 3537 - Criminal London: Aspects of Crime and Criminal Justice in Britain (3.0 cr)
• LNDN 3539 - Citizenship and Gender in Modern Europe (3.0 cr)
• LNDN 3615 - Urban Underworlds in Medieval and Early Modern London: A Literary Exploration (3.0 cr)
• LNDN 3733 - International Finance (3.0 cr)
• LNDN 3752 - International Marketing (3.0 cr)
• LNDN 3753 - International Economics (3.0 cr)
• LNDN 3754 - Creative Writing (3.0 cr)
• LNDN 3755 - Topics in London (3.0 cr)
• LNDN 3757 - British History in the 20th Century (3.0 cr)
• LNDN 3758 - International Business Environment (3.0 cr)
• LNDN 3759 - Islam, Politics, and Britain: A Case Study of London's East End (3.0 cr)

• On-Campus Elective
  Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  • TH 3100 - Theatre Practicum (1.0 cr)
  • TH 3115 - Introduction to Playwriting (3.0 cr)
  • TH 3120 - Theatre: Theory and Practice (3.0 cr)
  • TH 3314 - Text and the Actor (3.0 cr)
  • TH 3316 - Voice for the Actor (3.0 cr)
  • TH 3321 - Acting I (3.0 cr)
  • TH 3322 - Advanced Techniques for Characterization (3.0 cr)
  • TH 3330 - Physical Approaches to Acting (3.0 cr)
  • TH 3332 - Circus Performance (1.0 cr)
  • TH 3361 - Introductory Musical Theater (3.0 cr)
  • TH 3381 - Theater Storytelling and Solo Performance (3.0 cr)
  • TH 3521 - Introduction to Scenic Design for Theater and Performance (3.0 cr)
  • TH 3531 - Introduction to Theatrical Costume Design (3.0 cr)
  • TH 3541 - Introduction to Stage Lighting Design (3.0 cr)
  • TH 3559 - Introduction to Sound Design for the Theatre (3.0 cr)
  • TH 3571 - Introduction to Stage Technology (3.0 cr)
  • TH 3711 - Beginning Directing (3.0 cr)
  • TH 3716 - Stage Management (4.0 cr)
  • TH 3950 - Topics in Theatre (1.0 - 4.0 cr)
  • TH 4115 - Intermediate Playwriting (3.0 cr)
  • TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
  • TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
  • TH 4321 - Career Preparation for the Actor (3.0 cr)
  • TH 4322 - Acting for the Camera (3.0 cr)
  • TH 4380 - Creative Collaboration (1.0 - 3.0 cr)
  • TH 4555 - Audio Technology (3.0 cr)
  • TH 4711 - Intermediate Stage Direction (3.0 cr)
  • TH 4905H - Honors: Tutorial Seminar in Theatre Arts (2.0 - 4.0 cr)
  • TH 5100 - Theatre Practicum (1.0 - 4.0 cr)
  • TH 5117 - Performance and Social Change (3.0 cr)
  • TH 5179W - Text and Performance [WI] (3.0 cr)
  • TH 5183 - Critical Literacy, Storytelling, and Creative Drama (3.0 cr)
  • TH 5330 - Comedy: Advanced Physical Performance Studio (3.0 cr)
  • TH 5331 - Tragedy/Poetry: Advanced Physical Performance Studio (3.0 cr)
  • TH 5355 - Puppetry: Techniques and Practice in Contemporary Theater (3.0 cr)
  • TH 5370 - Hand, Mind, and Gesture: An Independent Study in the Creation of Image Driven Performance (3.0 cr)
  • TH 5500 - Theatre Design Practicum (1.0 - 3.0 cr)
  • TH 5510 - Drawing, Rendering, and Painting for the Theatre Designer I (3.0 cr)
  • TH 5520 - Scene Design (3.0 cr)
  • TH 5530 - Costume Design (3.0 cr)
  • TH 5540 - Lighting Design for the Theatre (3.0 cr)
  • TH 5545 - Stage Lighting Technology (3.0 cr)
  • TH 5559 - Sound Design for Performance (3.0 cr)
  • TH 5560 - Drawing, Rendering, and Painting for the Theatre Designer II (3.0 cr)
  • TH 5570 - Properties/Scenery Technology (1.0 - 3.0 cr)
  • TH 5580 - Costume Technology (3.0 cr)
  • TH 5590 - Theatre Technology Practicum (1.0 - 3.0 cr)
  • TH 5711 - Advanced Stage Direction (3.0 cr)
  • TH 5716 - Stage Management for the Theatre (4.0 cr)
  • TH 5760 - Advanced Stage Management (2.0 cr)
  • TH 5950 - Topics in Theatre (1.0 - 4.0 cr)
  • TH 5818W - Blacks in American Theatre [WI] (3.0 cr)
  • TH 5828W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  • TH 5822W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or TH 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or GLOS 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or GLOS 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  • TH 3311 - Asian American Theater (3.0 cr)
  or AAS 3311 - Asian American Theater (3.0 cr)

Movement Electives
  Note: Upper-division DNCE courses require placement based on audition or consent.
Take exactly 3 course(s) totaling 3 - 6 credit(s) from the following:

- DNCE 1001 - Modern/Contemporary Dance Technique 1 (1.0 cr)
- DNCE 1010 - Modern/Contemporary Dance Technique 3 (1.0 - 2.0 cr)
- DNCE 1020 - Modern/Contemporary Dance Technique 4 (1.0 - 2.0 cr)
- DNCE 1040 - Modern Dance Partnering Technique (1.0 cr)
- DNCE 1110 - Ballet Technique 3 (2.0 cr)
- DNCE 1120 - Ballet Technique 4 (2.0 cr)
- DNCE 1210 - Jazz Technique 3 (1.0 cr)
- DNCE 1302 - Tap Technique 2 (1.0 cr)
- DNCE 1331 - Yoga (1.0 cr)
- DNCE 1343 - Urban & Street Dance Forms 1: Introduction (1.0 cr)
- DNCE 1345 - Alexander Technique for Movement Artists (2.0 cr)
- DNCE 1349 - Contact Improvisation (1.0 cr)
- DNCE 3110 - Ballet Technique 5 (2.0 cr)
- DNCE 3120 - Ballet Technique 6 (2.0 cr)
- DNCE 3220 - Jazz Technique 6 (1.0 cr)
- DNCE 3337 - Body Mind Centering (2.0 cr)
- DNCE 3351 - African Diasporic Movement 5 (1.0 cr)
- DNCE 5110 - Ballet Technique 7 (1.0 cr)
- DNCE 5120 - Ballet Technique 8 (1.0 cr)
- PE 1007 - Beginning Swimming (1.0 cr)
- PE 1012 - Beginning Running (1.0 cr)
- PE 1014 - Conditioning (1.0 cr)
- PE 1015 - Weight Training (1.0 cr)
- PE 1016 - Posture and Individual Exercise (1.0 cr)
- PE 1029 - Handball (1.0 cr)
- PE 1031 - Sabre Fencing (1.0 cr)
- PE 1032 - Badminton (1.0 cr)
- PE 1033 - Foil Fencing (1.0 cr)
- PE 1034 - Judo (1.0 cr)
- PE 1035 - Karate (1.0 cr)
- PE 1036 - Racquetball (1.0 cr)
- PE 1037 - Squash Racquets (1.0 cr)
- PE 1038 - Beginning Tennis (1.0 cr)
- PE 1044 - Self-Defense (1.0 cr)
- PE 1045 - Rock Climbing (1.0 cr)
- PE 1046 - Tae Kwon Do (1.0 cr)
- PE 1048 - Bowling (1.0 cr)
- PE 1053 - Ice Skating (1.0 cr)
- PE 1055 - Golf (1.0 cr)
- PE 1057 - Beginning Skiing (1.0 cr)
- PE 1058 - Snowboarding (1.0 cr)
- PE 1065 - Beginning Tumbling and Gymnastics (1.0 cr)
- PE 1067 - Basketball (1.0 cr)
- PE 1071 - Beginning Cricket (1.0 cr)
- PE 1072 - Soccer (1.0 cr)
- PE 1074 - Beginning Volleyball (1.0 cr)
- PE 1076 - Flag Football (1.0 cr)
- PE 1077 - Lacrosse (1.0 cr)
- PE 1137 - Intermediate Squash (1.0 cr)
- PE 1146 - Intermediate Tae Kwan Do (1.0 cr)
- PE 1154 - Figure Skating (1.0 cr)
- PE 1205 - Scuba and Skin Diving (1.0 cr)
- PE 1262 - Marathon Training (3.0 cr)
- PE 1720 - Special Activities in Physical Education (1.0 - 3.0 cr)
- TH 3993 - Directed Study (1.0 - 6.0 cr)
- TH 5993 - Directed Study (1.0 - 5.0 cr)

**Capstone**

The senior capstone in the BFA Program leads students to develop an individual artistic process. The capstone asks students to identify skills that an artist needs to further their own work, while working both independently and collaboratively. Students will integrate the skills acquired through past training in the BFA Program. The BFA Capstone provides concentrated opportunities to examine artistic possibilities as they begin their life-long journey of learning and artistic expression.

Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major are still required to take the Acting
BFA capstone.
  • TH 4398 - BFA Rehearsal and Performance V (2.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
  • LNDN 3212W - Travel Writing: Topics in Composition [WI] (3.0 cr)
  • LNDN 3217W - Writing the City: London [WI] (3.0 cr)
  • LNDN 3220W - Contemporary World Architecture in London [WI] (3.0 cr)
  • LNDN 3221W - Writing a Play [WI] (3.0 cr)
  • LNDN 3249W - Experiencing Globalization: Society, Space and Everyday Life in London [SOCS, CIV, WI] (3.0 cr)
  • LNDN 3253W - Contemporary Issues through Community Engagement: Social Dynamics of London [CIV, GP, WI] (3.0 cr)
  • LNDN 3254W - Introduction to Science Fiction [LITR, WI] (3.0 cr)
  • LNDN 3343W - Post War Popular Culture [WI] (3.0 cr)
  • TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
  • TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
  • TH 5179W - Text and Performance [WI] (3.0 cr)
  • TH 5181W - Blacks in American Theatre [WI] (3.0 cr)
  • TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  • TH 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
    or TH 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
    or GLOS 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
    or GLOS 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
Twin Cities Campus
African American and African Studies B.A.
African Amer & African Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 30
- Degree: Bachelor of Arts

African American & African Studies (AA&AS) is a place to make connections across the complexities of Africa, Black America, and the African diaspora. Multidisciplinary in its approach to learning, AA&AS students are exposed to the pressing challenges of the modern world, as well as possibilities for transformations through the study of African American and African history, literature, and culture, and the study of Africa in global perspectives. The courses present students with tools of inquiry from multiple liberal arts disciplines to make known tremendous diversities and overlapping histories and experiences within the wider black world. AA&AS also offers two African languages, Swahili (spoken throughout East, Central, and South Africa) and Somali, in its undergraduate curriculum. The major curriculum consists of three core courses and seven upper-division elective courses. Many AA&AS graduates have not only been accepted to professional and graduate schools, but have also cultivated their career paths in exciting directions including education, business, medicine, law, the arts, journalism, local and transnational advocacy work, and foreign affairs.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the African American and African Studies BA is AFRO.

At least 12 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus. At least 15 credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students are encouraged to meet with the AA&AS departmental advisor at least once a year.

Students may earn a BA or a minor in African American and African studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:

Preparatory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- AFRO 1011 - Introduction to African American Studies (3.0 cr)
- AFRO 1021 - Introduction to Africa [GP] (3.0 cr)
- AFRO 1023W - Introduction to African World Literature [GP, LITR, WI] (3.0 cr)
- AFRO 19xx - Freshman Seminar

Core Theory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• AFRO 4105 - Ways of Knowing in Africa and the African Diaspora (3.0 cr)

Electives
Any AFRO 3xx, 4xxx, 5xxx or its cross-list may count as an elective.
Take exactly 7 course(s) totaling 21 or more credit(s) from the following:
• AFRO 3006 - Impact of African Migrations in the Atlantic World (3.0 cr)
• AFRO 3108 - Black Music: A History of Jazz (3.0 cr)
• AFRO 3112 - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
• AFRO 3131 - Peace & Conflict in 21st Century Africa (3.0 cr)
• AFRO 3135 - Political Dynamics in the Horn of Africa [SOCS, GP] (3.0 cr)
• AFRO 3301 - The Music of Black Americans [AH, DSJ] (3.0 cr)
• AFRO 3426 - African Americans, Social Policy, and the Welfare State (3.0 cr)
• AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
• AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
• AFRO 3593 - The African American Novel (3.0 cr)
• AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
• AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
• AFRO 3864 - African American History: 1619 to 1865 [HIS, CIV] (3.0 cr)
• AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
• AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
• AFRO 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)
Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- AFRO 3601W - African Literature [LITR, GP, WI] (3.0 cr)
- AFRO 3625W - Women Writers of Africa and the African Diaspora [LITR, GP, WI] (3.0 cr)
- AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
- AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- AFRO 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
- ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
- AFRO 3625W - Women Writers of Africa and the African Diaspora [LITR, GP, WI] (3.0 cr)
- AFRO 5625 - Women Writers of Africa and the African Diaspora (3.0 cr)
- POL 4359W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
- ENGL 3598W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
- AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
- AFRO 3688W - Race, War, and Race Wars in American History [WI] (3.0 cr)
- HIST 3868W - Race, War, and Race Wars in American History [CIV, WI] (3.0 cr)
- AFRO 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
- POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)

Capstone

The capstone consists of a research paper of 25-40 pages in length. Choose to complete this paper by enrolling in AFRO 4991W, or any AFRO 4xxx/5xxx course (excluding AFRO 4105) that is not being taken as an elective. Students who are interested in rigorous research and one-on-one work with department faculty should take AFRO 4991W. The capstone must be chosen in consultation with the director of undergraduate studies.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major may waive the African American and African Studies capstone, but are still responsible for taking the 30 credits required for the African American and African Studies major.

- AFRO 4991W - Thesis Research and Writing [WI] (3.0 cr)
- AFRO 4xxx
- AFRO 5xxx

Gender-focused Elective

Other courses that do not appear on this list may count with prior approval from the departmental advisor.
Twin Cities Campus

African American and African Studies Minor

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The African American and African Studies (AA&AS) minor integrates the global study of African peoples by teaching students the tools of inquiry from the liberal arts disciplines. The minor is designed to be flexible and to meet the needs of students preparing for careers in both the public and private spheres.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Students may earn a BA or a minor in African American and African studies, but not both.

Electives

Any AFRO 3xxx, 4xxx, 5xxx or its cross-list may count towards this requirement.
Take 15 or more credit(s) from the following:
- AFRO 3006 - Impact of African Migrations in the Atlantic World (3.0 cr)
- AFRO 3108 - Black Music: A History of Jazz (3.0 cr)
- AFRO 3112 - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
- AFRO 3306 - Impact of African Migrations in the Atlantic World (3.0 cr)
- AFRO 3311W - Peace & Conflict in 21st Century Africa (3.0 cr)
- AFRO 3315 - Political Dynamics in the Horn of Africa [SOCS, GP] (3.0 cr)
- AFRO 3301 - The Music of Black Americans [AH, DSJ] (3.0 cr)
- AFRO 3426 - African Americans, Social Policy, and the Welfare State (3.0 cr)
- AFRO 3578 - Contemporary Sub-Saharan African Popular Art Forms [AH, TS] (3.0 cr)
- AFRO 3601W - African Literature [LITR, GP, WI] (3.0 cr)
- AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
- AFRO 3745 - Black Cultural Studies [AH, DSJ] (3.0 cr)
- AFRO 3867 - Black Men: Representations and Reality (3.0 cr)
- AFRO 3910 - Topics in African American and African Studies (1.0 - 3.0 cr)
- AFRO 3993 - Directed Study (1.0 - 5.0 cr)
- AFRO 4105 - Ways of Knowing in Africa and the African Diaspora (3.0 cr)
- AFRO 4151 - Seminar: Introduction to Africa and the African Diaspora (3.0 cr)
- AFRO 4191 - Seminar: The African American Experience in South Africa (3.0 cr)
- AFRO 4910 - Topics in African American and African Studies (3.0 cr)
- AFRO 5993 - Directed Study (1.0 - 3.0 cr)
- AFRO 3002 - West African History: 1800 to Present [GP] (3.0 cr)
  or HIST 3455 - West African History: 1800 to Present [GP] (3.0 cr)
- AFRO 3103 - World History and Africa [HIS, GP] (3.0 cr)
  or AFRO 5103 - World History and Africa (3.0 cr)
- AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
  or AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
- AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
  or GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- AFRO 3431 - Early Africa and its Global Connections [HIS, GP] (3.0 cr)
or HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
- AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
or HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
or APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
or HIST 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
or HIST 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
or ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or AFRO 3593 - The African American Novel (3.0 cr)
or AFRO 5593 - The African American Novel (3.0 cr)
or ENGL 3593 - The African American Novel (3.0 cr)
or ENGL 5593 - The African-American Novel (3.0 cr)
or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
or AFRO 3625W - Women Writers of Africa and the African Diaspora [LITR, GP, WI] (3.0 cr)
or AFRO 5625 - Women Writers of Africa and the African Diaspora (3.0 cr)
or AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
or AFRO 5627 - Seminar: Harlem Renaissance (3.0 cr)
or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
or AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or AFRO 3864 - African American History: 1619 to 1865 [HIS, CIV] (3.0 cr)
or HIST 3864 - African American History: 1619 to 1865 [HIS, CIV] (3.0 cr)
or AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
or HIST 3865 - African American History, 1865 to Present (3.0 cr)
or AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or HIST 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 3866W - Race, War, and Race Wars in American History [WI] (3.0 cr)
or HIST 3866W - Race, War, and Race Wars in American History [WI] (3.0 cr)
or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AFRO 4335 - African American Politics (3.0 cr)
or POL 4335 - African American Politics (3.0 cr)
or AFRO 4406 - Black Feminist Thought (3.0 cr)
or AFRO 4506 - Black Feminist Thought (3.0 cr)
or GWSS 4406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
or GWSS 4506 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
or AFRO 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
or POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
or AFRO 5932 - The Production of Knowledge, Negotiating the Past, and the Writing of African Histories (3.0 cr)
or HIST 5932 - The Production of Knowledge, Negotiating the Past, and the Writing of African Histories (3.0 cr)
American Indian studies is dedicated to advancing awareness and understanding of the histories and contemporary experiences of American Indian people. The program focuses on the native peoples of the United States and Canada, but also draws on the experiences of indigenous peoples from other parts of the world. This multidisciplinary field looks at the histories, cultures, arts, languages, literatures, philosophies, religions, economies, politics, and legal status of indigenous peoples. The program also focuses on the many differences that have separated tribal nations as sovereign bodies and on the many similarities that unite them in common interests and causes. It gives special attention to the sovereignty of American Indian nations as this is expressed in all walks of life - from the preservation and revitalization of native languages to the protection and retention of native lands.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the American Indian Studies BA is AMIN.

Students must choose to specialize in either the General Track or the Language Track.

A given course may only count towards one major requirement.

At least 14 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or minor in American Indian Studies, but not both, and students who declare the Language sub-plan in Ojibwe may not earn the Ojibwe Language BA.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Introductory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- AMIN 1001 - Introduction to American Indian & Indigenous Peoples [DSJ] (3.0 cr)

Capstone
The Capstone Seminar is the culmination of a students career as an American Indian Studies major. The seminar guides students in the process of developing and producing an original research project that demonstrates their skills as interdisciplinary critical thinkers and writers in American Indian Studies. AMIN 4821W is only offered in the fall term, careful pre-planning is important.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the American Indian Studies BA capstone, and they do not need to replace the 3 credits.

• AMIN 4821W - Capstone Seminar [WI] (3.0 cr)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

• AMIN 4821W - Capstone Seminar [WI] (3.0 cr)
• OJIB 5204W - Ojibwe Mastery II [WI] (3.0 cr)
• AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
  or POL 4525W - Federal Indian Policy [WI] (3.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.

General

The General track requires at least 33 credits of coursework, including AMIN 1001 & AMIN 4821W. It is intended for majors who do not wish to complete their second language requirement in Dakota or Ojibwe.

Foundation Course

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

• AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  or POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
• AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)

Core Courses

AMIN 4990, 4991, 4994, & 4996 may be used to satisfy a specific group's requirements with the permission of the director of undergraduate studies.

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

Tribal Arts and Humanities (Group A)

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

• AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
• AMIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
  or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
  or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)

• Culture and History (Group B)

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

• AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
• AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
  or AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
• AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
  or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
• AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)

• Political, Social, and Policy Issues (Group C)

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

• AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
• AMIN 4511 - Indigenous Political Economies (3.0 cr)
• AMIN 5202 - Indigenous Peoples and Issues Before the United States Supreme Court (3.0 cr)
• AMIN 3141 - American Indian Language Planning (3.0 cr)
  or AMIN 5141 - American Indian Language Planning (3.0 cr)
• AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  or POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
or AMIN 5602 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)

• AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)

Electives
Take 15 or more credit(s) from the following:

- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
- AMIN 3604 - Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)
- AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- AMIN 4511 - Indigenous Political Economies (3.0 cr)
- AMIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
- AMIN 4990 - Topics in American Indian Studies (1.0 - 4.0 cr)
- AMIN 4994 - Directed Research (1.0 - 12.0 cr)
- AMIN 4996 - Field Study (1.0 - 12.0 cr)
- AMIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
- AMIN 5202 - Indigenous Peoples and Issues Before the United States Supreme Court (3.0 cr)
- AMIN 5920 - Topics in American Indian Studies (3.0 cr)
- AMIN 3001 - Public History (3.0 cr)
or AMST 3003 - Public History (3.0 cr)
or HIST 3001 - Public History (3.0 cr)
- AMIN 3141 - American Indian Language Planning (3.0 cr)
or AMIN 5141 - American Indian Language Planning (3.0 cr)
- AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
or AMST 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
or AMIN 5602 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
- AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
- AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
- AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
- AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
- AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)

• Take 0 or more course(s) from the following:
  • DAKO 3xxx
  • DAKO 5xxx
  • OJIB 3xxx
Language
The Language track requires at least 31 credits of coursework, including AMIN 1001 & AMIN 4821W. It is designed for students who wish to deepen their understanding of the field by completing two years of either Dakota or Ojibwe.

The required four semesters of Dakota or Ojibwe language study will satisfy the CLA second language requirement.

Language Sequence
Take either the Dakota or Ojibwe 6-course language sequence for 26 credits. In select cases, students with advanced proficiency may be exempt from taking one or more of these courses. Placement is determined by the Dakota and Ojibwe Language Coordinators.

Dakota
Take 4 - 6 course(s) totaling 16 - 26 credit(s) from the following:
- DAKO 1121 - Beginning Dakota I (5.0 cr)
- DAKO 1122 - Beginning Dakota II (5.0 cr)
- DAKO 3123 - Intermediate Dakota I (5.0 cr)
- DAKO 3124 - Intermediate Dakota II (5.0 cr)
- DAKO 5126 - Advanced Dakota Language I (3.0 cr)
- DAKO 5129 - Advanced Dakota Language II (3.0 cr)

or

Ojibwe
Take 4 - 6 course(s) totaling 16 - 26 credit(s) from the following:
- OJIB 1101 - Beginning Ojibwe I (5.0 cr)
- OJIB 1102 - Beginning Ojibwe II (5.0 cr)
- OJIB 3103 - Intermediate Ojibwe I (5.0 cr)
- OJIB 3104 - Intermediate Ojibwe II (5.0 cr)
- OJIB 5106 - Advanced Ojibwe Language I (3.0 cr)
- OJIB 5109 - Advanced Ojibwe Language II (3.0 cr)

Advanced Language Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- DAKO 3125 - Introduction to Dakota Linguistics (3.0 cr)
- DAKO 3127 - Dakota Language for Teachers (3.0 cr)
- AMIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
- AMIN 3141 - American Indian Language Planning (3.0 cr)

or

AMIN 5141 - American Indian Language Planning (3.0 cr)

Electives
Take 6 or more credit(s) from the following:
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
- AMIN 3604 - Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)
- AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- AMIN 4511 - Indigenous Political Economies (3.0 cr)
- AMIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
- AMIN 4990 - Topics in American Indian Studies (1.0 - 4.0 cr)
- AMIN 4994 - Directed Research (1.0 - 12.0 cr)
- AMIN 4996 - Field Study (1.0 - 12.0 cr)
- AMIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
- AMIN 5202 - Indigenous Peoples and Issues Before the United States Supreme Court (3.0 cr)
- AMIN 5920 - Topics in American Indian Studies (3.0 cr)
- AMIN 3001 - Public History (3.0 cr)
- AMST 3003 - Public History (3.0 cr)
- HIST 3001 - Public History (3.0 cr)
- AMIN 3141 - American Indian Language Planning (3.0 cr)
- AMIN 5141 - American Indian Language Planning (3.0 cr)
- AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- AMIN 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
or AMIN 5602 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
• AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
• AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
• Take 0 or more course(s) from the following:
  • DAKO 3xxx
  • DAKO 5xxx
  • OJIB 3xxx
  • OJIB 5xxx
Twin Cities Campus
American Indian Studies Minor
American Indian Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18

The minor in American Indian Studies combines seamlessly with any major to build a solid foundation in understanding American Indian and Indigenous communities in the US and around the world, and is excellent preparation for students who might want to seek employment in issues related to those communities. Coursework on contemporary issues, environment and sustainability, education, law and policy, culture, arts, gender, and more will prepare students to excel in a host of careers that are related to their major and to succeed in agencies, schools, tribal governments, private businesses, and other organizations working with Indigenous communities and individuals. AIS has minors whose majors range from Biological Sciences to Communications to Sociology to Marketing and more, and our minors have gone on to careers ranging from medicine to state and tribal government to human resource management.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or minor in American Indian Studies, but not both. Students may combine the American Indian Studies minor with any other departmental major or certificate.

A given course may only count towards one minor requirement.

Students may earn a BA or minor in American Indian Studies, but not both. Students may combine the American Indian Studies minor with the Ojibwe Language BA.

Foundation Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• AMIN 1001 - Introduction to American Indian & Indigenous Peoples [DSJ] (3.0 cr)
• AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)
• AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  or POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)

Electives
Take 15 or more credit(s) from the following:
• AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
• AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
• AMIN 3604 - Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)
• AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
• AMIN 4511 - Indigenous Political Economies (3.0 cr)
• AMIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
• AMIN 4990 - Topics in American Indian Studies (1.0 - 4.0 cr)
• AMIN 4994 - Directed Research (1.0 - 12.0 cr)
• AMIN 4996 - Field Study (1.0 - 12.0 cr)
• AMIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
• AMIN 5202 - Indigenous Peoples and Issues Before the United States Supreme Court (3.0 cr)
• AMIN 5920 - Topics in American Indian Studies (3.0 cr)
• AMIN 3001 - Public History (3.0 cr)
  or AMST 3003 - Public History (3.0 cr)
  or HIST 3001 - Public History (3.0 cr)
• AMIN 3141 - American Indian Language Planning (3.0 cr)
  or AMIN 5141 - American Indian Language Planning (3.0 cr)
• AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
  or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
  or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
  or AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
• AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  or POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
  or AMIN 5602 - Archaeology and Native Americans [DSJ] (3.0 cr)
  or ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
  or ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
• AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
  or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
• AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
  or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
  or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
  or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
American Studies provides a unique interdisciplinary approach to the study of American Society. The program provides a broad, interdisciplinary approach to the study of critical issues to American society, with an emphasis on deep historical, cultural, and political understandings. Faculty in the program come from a range of fields and have varied expertise.

Students majoring in American Studies undertake a unique, interdisciplinary study of American society, gaining critical perspectives on past and contemporary issues and topics. They typically pursue their own interests within the very broad range of educational opportunities in the program. Courses offered by the department explore a wide range of topics, including popular culture, politics, migration, religion, history, race, gender, and sexuality, as well as important issues such as America’s changing place in the world, foreign policy, the events of 9/11, and economic crises and inequality.

Majoring in American Studies provides an opportunity for students to pursue particular interests while gaining broad training in a variety of topics and interdisciplinary scholarship. The program of study provides opportunities for the development of writing, critical and creative thinking, and research skills, which culminate in the Senior Project. The Senior Seminar is a year-long course of study limited to graduating seniors in American Studies, giving a chance for undergraduates to work closely with the faculty member in developing and undertaking a major research project which serves as the capstone for the undergraduate program. This unique process allows students to use their skills and knowledge to conduct original research or creative work, which reflects their interests and expertise on a particular topic.

In addition, the Department of American Studies cooperates with the Departments of African-American and African Studies, American Indian Studies, Chicano & Latino Studies, and Asian American Studies, which makes it possible for students to concentrate their studies in one of those cultural areas.

American Studies provides a unique preparation for students interested in an interdisciplinary approach to a particular aspect of American society, while preparing them for careers or further graduate training. The program encourages service learning, internships, and partnerships with the Minnesota Historical Society to place undergraduates into working on and researching public history. Graduates are well prepared for work in the public and private sector, as well as nonprofit and non-governmental organizations. Current alumni work in a range of fields including education, non-profits, research, historical preservation, journalism, mass media, law, and medicine.

Transfer students interested in American Studies should contact the Department of American Studies to discuss previous coursework, transfer credits, and likely course of study at Minnesota. Students wishing to double major or minor should also contact the department about developing a course of study and graduation plan.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://www.admissions.umn.edu/).

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](https://www.umn.edu/registrar/curriculum/liberal-education). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.
CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the American Studies BA is AMST.

At least 12 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a minor in American studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

### Foundation Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:

#### Introductory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **AMST 2031** - Chasing the American Dream: Economic Opportunity & Inequality in the U.S. [DSJ, HIS] (3.0 cr)

#### Other Preparatory Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- **AMST 1012** - Migrants, Refugees, Citizens, and Exiles: The U.S. on an Immigrant Planet [CIV] (3.0 cr)
- **AMST 1401** - Comparative Genders and Sexualities [DSJ] (3.0 cr)
- **AMST 1511** - Americans Abroad: Rethinking Travel, Culture, & Empire [GP, HIS] (3.0 cr)
- **AMST 19xx** - Freshmen Seminar
- **AMST 2011** - The United States since September 11 [CIV, HIS] (3.0 cr)

### Electives
Take exactly 7 course(s) totaling 21 or more credit(s) from the following:

#### American Studies Electives
Take 4 - 7 course(s) from the following:
- **AMST 3112** - Prince, Porn, and Public Space: The Cultural Politics of the Twin Cities in the 1980s [DSJ, HIS] (3.0 cr)
- **AMST 3113W** - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- **AMST 3114** - America in International Perspective [DSJ] (3.0 cr)
- **AMST 3252W** - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
- **AMST 3253W** - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- **AMST 3896** - Internship for Academic Credit (1.0 - 4.0 cr)
- **AMST 3920** - Topics in American Studies (3.0 cr)
- **AMST 3993** - Directed Studies (1.0 - 9.0 cr)
- **AMST 4301** - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- **AMIN 3001** - Public History (3.0 cr) or **HIST 3001** - Public History (3.0 cr)
- **AMST 3001** - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- **AMIN 3001** - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- **AMST 3003** - Public History (3.0 cr)
- **AMST 3361** - Asian Americans and Food (3.0 cr)
- **AMST 4101** - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
- **AMIN 4101** - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
- **AMST 4132W** - Dissident Sexualities in U.S. History [GP, WI] (3.0 cr)
- **AMST 4141** - Inclusion in Public History and Museums (3.0 cr)
- **AMST 5412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
- **AMST 5412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
- **ANTH 5412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
- **CHIC 3412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
- **CHIC 5412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
- **GWSS 3515** - Comparative Indigenous Feminisms [GP] (3.0 cr)

#### Other Electives
Other courses may be approved by the director of undergraduate studies. Take 0 - 3 course(s) from the following:
- **AAS 3271** - Learning in the Asian American Community (3.0 cr)
- **AAS 3601W** - War and Empire: Asian American Perspectives [GP, WI] (3.0 cr)
- **AFRO 3006** - Impact of African Migrations in the Atlantic World (3.0 cr)
- **AFRO 3108** - Black Music: A History of Jazz (3.0 cr)
- **AFRO 3112** - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>AFRO 3301</td>
<td>The Music of Black Americans [AH, DSJ]</td>
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<tr>
<td>AFRO 3426</td>
<td>African Americans, Social Policy, and the Welfare State (3.0 cr)</td>
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<td>AFRO 3745</td>
<td>Black Cultural Studies [AH, DSJ]</td>
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<td>AFRO 3867</td>
<td>Black Men: Representations and Reality (3.0 cr)</td>
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<tr>
<td>AFRO 3910</td>
<td>Topics in African American and African Studies (1.0 - 3.0 cr)</td>
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<td>AFRO 5910</td>
<td>Topics in African American and African Studies (3.0 cr)</td>
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<td>AMIN 3303</td>
<td>American Indians and Photography [AH, DSJ]</td>
<td>3.0 cr</td>
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<tr>
<td>AMIN 3304</td>
<td>Indigenous Filmmakers [AH]</td>
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<tr>
<td>AMIN 3312</td>
<td>American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)</td>
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<td>AMIN 3604</td>
<td>Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)</td>
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<td>AMIN 3711</td>
<td>Dakota Culture and History [HIS, DSJ]</td>
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<td>AMIN 4501</td>
<td>Law, Sovereignty, and Treaty Rights (3.0 cr)</td>
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<td>AMIN 4511</td>
<td>Indigenous Political Economies (3.0 cr)</td>
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<td>AMIN 4532</td>
<td>Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)</td>
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<td>AMIN 4990</td>
<td>Topics in American Indian Studies (1.0 - 4.0 cr)</td>
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<td>AMIN 5007</td>
<td>The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)</td>
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<td>AMIN 5202</td>
<td>Indigenous Peoples and Issues Before the United States Supreme Court (3.0 cr)</td>
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<td>AMIN 5920</td>
<td>Topics in American Indian Studies (3.0 cr)</td>
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<td>CHIC 3221</td>
<td>Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)</td>
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<td>CHIC 3223</td>
<td>Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)</td>
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<td>CHIC 3275</td>
<td>Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)</td>
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<td>CHIC 3352</td>
<td>Transborder Theory: Global Views/Borderland Spaces (3.0 cr)</td>
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<td>CHIC 3375</td>
<td>Folktale of Greater Mexico [DSJ]</td>
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<td>CHIC 3452</td>
<td>Chicana/Latinx Indigenousity [DSJ]</td>
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<td>CHIC 3672</td>
<td>Chicana/o Experience in the Midwest [DSJ] (3.0 cr)</td>
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<td>CHIC 3771</td>
<td>Latino Social Power and Social Movements in the U.S. (3.0 cr)</td>
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<td>CHIC 3868</td>
<td>Immigration and the U.S. Latina/o Experience: Diaspora, Identity, and Community [HIS, DSJ] (3.0 cr)</td>
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<tr>
<td>CHIC 3900</td>
<td>Topics in Chicano Studies (3.0 cr)</td>
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<tr>
<td>CHIC 4232</td>
<td>Chicana/o - Latina/o Gender and Sexuality Studies [AH, DSJ] (3.0 cr)</td>
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<tr>
<td>CHIC 4275</td>
<td>Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)</td>
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<tr>
<td>CHIC 5920</td>
<td>Topics in Chicana(o) Studies (3.0 cr)</td>
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<tr>
<td>CHIC 5993</td>
<td>Directed Studies (1.0 - 3.0 cr)</td>
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<tr>
<td>TH 5181W</td>
<td>Blacks in American Theatre [WI] (3.0 cr)</td>
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<td>TH 5182W</td>
<td>Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)</td>
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<td>AAS 3211W</td>
<td>Race &amp; Racism in the U.S. [DSJ, WI] (3.0 cr)</td>
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<td>AAS 3211W</td>
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<td>AAS 3251W</td>
<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)</td>
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<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)</td>
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<td>AAS 3301</td>
<td>Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)</td>
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<td>Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)</td>
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<td>AAS 3341</td>
<td>Asian American Images [AH, DSJ] (3.0 cr)</td>
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<td>AAS 3351</td>
<td>Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)</td>
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<td>AAS 3351</td>
<td>Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)</td>
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<td>AAS 3408W</td>
<td>Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)</td>
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<td>AAS 3483</td>
<td>Hmong History Across the Globe (3.0 cr)</td>
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<td>AAS 3503</td>
<td>Asian American Identities, Families, &amp; Communities [SOCS, DSJ] (3.0 cr)</td>
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<td>AAS 3503</td>
<td>Asian American Identities, Families, &amp; Communities [SOCS, DSJ] (3.0 cr)</td>
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<td>AAS 3503H</td>
<td>Honors: Asian American Identities, Families &amp; Communities [SOCS, DSJ] (3.0 cr)</td>
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<td>AAS 3877</td>
<td>Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)</td>
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<td>AAS 3896</td>
<td>Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)</td>
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<td>AAS 3896</td>
<td>Arab American Experiences (3.0 cr)</td>
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<td>AAS 3875W</td>
<td>Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)</td>
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<td>AAS 3875W</td>
<td>Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)</td>
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<td>AAS 4231</td>
<td>Color of Public Policy: African Americans, American Indians, Asian Americans &amp; Chicanos in the U.S. (3.0 cr)</td>
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or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
CHIC 3212 - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
or GWSS 3212 - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
or ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
or CHIC 5374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
CHIC 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
or HIST 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
CHIC 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or HIST 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
or ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
or POL 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
or GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)

**Capstone**
The Proseminar is a capstone that furthers understanding of important debates in American Studies and the methodologies that scholars use in their research. Proseminar will help students conceptualize a research project and develop a means of investigation in a collaborative classroom setting. Students will complete the research and writing of a capstone research project, which concludes with a public presentation of the capstone.

Students who double major and choose to complete the capstone requirement in their other major are still required to take the American Studies capstone.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- AMST 4962W - Second Proseminar in American Studies [WI] (3.0 cr)

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements. Only AMST courses may count towards this requirement.

Take 0 - 1 course(s) from the following:
- AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- AMST 4962W - Second Proseminar in American Studies [WI] (3.0 cr)
Twin Cities Campus
American Studies Minor
American Studies
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

American studies is an interdisciplinary and comparative study of the United States as the outcome of migration, labor accumulation, land acquisition, cultural dissemination, the implantation of U.S. laws and policies, and identity formations around gender, sexuality, and race. As an interdisciplinary field, American studies brings the social sciences and humanities together.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in American studies, but not both.

Electives
Other courses may count with approval from the director of undergraduate studies. Take 15 or more credit(s) from the following:
- AMST 3112 - Prince, Porn, and Public Space: The Cultural Politics of the Twin Cities in the 1980s [DSJ, HIS] (3.0 cr)
- AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- AMST 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
- AMST 3920 - Topics in American Studies (3.0 cr)
- AMST 3993 - Directed Studies (1.0 - 9.0 cr)
- AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- AMST 4401 - Inclusion in Public History and Museums (3.0 cr)
- AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
  or AAS 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- AMST 3003 - Public History (3.0 cr)
  or AMIN 3001 - Public History (3.0 cr)
- AMST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or GLBT 3212 - Dissident Sexualities in U.S. History (3.0 cr)
- AMST 3361 - Asian Americans and Food (3.0 cr)
  or AAS 3361 - Asian Americans and Food (3.0 cr)
- AMST 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
  or GLBT 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
- AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
Twin Cities Campus
Anthropology B.A.
Anthropology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 35
- Degree: Bachelor of Arts

Anthropology is the study of human beings and cultures throughout the world during the present and past. It is the study of who we are, and how we came to be that way. Anthropology is partly a natural science, partly a social science, and partly a humanistic study. Anthropology majors compare and contrast the biological, social, and cultural similarities and differences of humans and their societies across the globe and develop a sophisticated understanding of the biological unity of our species. Perhaps more than with any other degree, Anthropology majors are known to possess unique observational and critical thinking skills, and are aware of the role that culture plays in identity, relationships, and decision-making.

Students who major in the field are expected to take courses in the four sub-fields of anthropology. Students planning a professional career in anthropology general specialize in one of the sub-fields: biological anthropology (the evolutionary history of human and nonhuman primates), archaeology (the study of prehistoric and historic societies through their material culture), sociocultural anthropology (the study of the behavior of recent people in settings that range from unindustrialized societies to modern urban centers), and linguistic anthropology (the comparative study of languages and communication). The Anthropology Department website (http://cla.umn.edu/anthropology/ba-anthropology) offers several examples of course sequences designed to provide training in particular sub-fields. There are a variety of opportunities for graduates with degrees in anthropology. While some go on to graduate school in order to obtain a position in a university, most graduates find non-academic jobs in the private and public sectors. Private industry consulting, environmental firms, product development and marketing firms, as well as the nonprofit sector all employ anthropologists because of the unique observational and critical thinking skills they possess. Governmental agencies at the state and federal levels seek anthropologists for various positions. Biological anthropologists find employment as forensic scientists working for law enforcement. Archaeologists find jobs in cultural resource management (CRM) firms whose services are contracted by construction companies to ensure compliance with legislation pertaining to archaeological and historical preservation.

An anthropology major is also excellent preparation for professional schools in medicine, public health, nursing, and law. An anthropology major offers a holistic education that, regardless of the job attained after graduation, provides a perspective on humanity that inspires a lifetime of engagement with the issues of importance to our globalized society.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the communication studies BA is COMM.

At least 14 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a bachelor of arts or a minor in communication studies, but not both.
All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Foundation Courses**
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- **ANTH 1001** - Human Evolution [BIOL] (4.0 cr)
- **ANTH 1003W** - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
  or **ANTH 1003V** - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)

**Subfield Core Courses**
Take at least one course from at least three of the four subfields: archeology; biological anthropology; sociocultural anthropology; linguistic anthropology.
Take 3 or more course(s) totaling 9 - 12 credit(s) including 3 or more sub-requirements(s) from the following:
- **Archeology**
  - **ANTH 3401** - The Human Fossil Record [SOCS] (4.0 cr)
  - **ANTH 3001** - Introduction to Archaeology [SOCS] (4.0 cr)
- **Biological Anthropology**
  - **ANTH 3401** - The Human Fossil Record (3.0 cr)
  or **ANTH 5401** - The Human Fossil Record (3.0 cr)
  or **ANTH 3002** - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  or **EEB 3002** - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
- **Sociocultural Anthropology Subfield**
  - **ANTH 3003** - Cultural Anthropology (3.0 cr)
- **Linguistic Anthropology Subfield**
  - **ANTH 3005W** - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
  or **ANTH 3015W** - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
  or **ANTH 5015W** - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)

**Electives**
The number of credits required will depend on the amount of credits taken toward the Subfield Core Courses. Students should complete a minimum of 5 courses to reach the 35-credit minimum for the major.
Take 5 or more course(s) from the following:
- **ANTH 4xxx-5xxx**
  Take 3 or more course(s) from the following:
  - **ANTH 4001** - Advanced Method and Theory in Archaeology (3.0 cr)
  - **ANTH 4003W** - Contemporary Perspectives in Cultural Anthropology [WI] (3.0 cr)
  - **ANTH 4007** - Laboratory Techniques in Archaeology (1.0 - 4.0 cr)
  - **ANTH 4019** - Symbolic Anthropology (3.0 cr)
  - **ANTH 4025** - Studies in Ethnographic Classics (3.0 cr)
  - **ANTH 4031W** - Anthropology and Social Justice [CIV, WI] (4.0 cr)
  - **ANTH 4035** - Ethnographic Research Methods (3.0 cr)
  - **ANTH 4047** - Anthropology of American Culture [SOCS] (3.0 cr)
  - **ANTH 4053** - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
  - **ANTH 4069** - Historical Ecology & Anthropology of the Environment (3.0 cr)
  - **ANTH 4075** - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
  - **ANTH 4077** - Neanderthals: Biology and Culture of Humanity's Nearest Relative (3.0 cr)
  - **ANTH 4101** - Decolonizing Archives (3.0 cr)
  - **ANTH 4121** - Business Anthropology (3.0 cr)
  - **ANTH 5000** - Advanced Flintknapping (3.0 cr)
  - **ANTH 5009** - Human Behavioral Biology (3.0 cr)
  - **ANTH 5015W** - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
  - **ANTH 5027W** - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
  - **ANTH 5028** - Introduction to Historical Archaeology (3.0 cr)
  - **ANTH 5041** - Ecological Anthropology (3.0 cr)
  - **ANTH 5045W** - Urban Anthropology [WI] (3.0 cr)
  - **ANTH 5112** - Reconstructing Hominin Behavior (3.0 cr)
  - **ANTH 5113** - Primate Evolution (3.0 cr)
  - **ANTH 5221** - Anthropology of Material Culture (3.0 cr)
  - **ANTH 5244** - Interpreting Ancient Bone (4.0 cr)
  - **ANTH 5255** - Archaeology of Ritual and Religion (3.0 cr)
  - **ANTH 5269** - Analysis of Stone Tool Technology (4.0 cr)
  - **ANTH 5327W** - Inca, Aztec & Maya Civilizations [HIS, WI] (3.0 cr)
  - **ANTH 5401** - The Human Fossil Record (3.0 cr)
  - **ANTH 5402** - Zooarchaeology Laboratory (3.0 cr)
  - **ANTH 5403** - Quantitative Methods in Biological Anthropology (4.0 cr)
  - **ANTH 5405** - Human Skeletal Analysis (4.0 cr)
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• ANTH 5448 - Applied Heritage Management (3.0 cr)
• ANTH 5450 - Spatial Analysis in Anthropology: Research Design and Field Applications (3.0 cr)
• ANTH 5501 - Managing Museum Collections (3.0 cr)
• ANTH 5980 - Topics in Anthropology (3.0 cr)
• ANTH 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
or MEST 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
• ANTH 5490 - Religion and Culture (3.0 cr)
or RELS 4090 - Religion and Culture (3.0 cr)
• ANTH 5501 - Managing Museum Collections (3.0 cr)
• ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or AMIN 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)

**Directed Studies, Reading and Research Courses**
Courses must be taken for at least 3 credits to count toward this requirement.
Take at most 6 credit(s) from the following:

• ANTH 4991 - Independent Study (1.0 - 6.0 cr)
• ANTH 4992 - Directed Readings (1.0 - 6.0 cr)
• ANTH 4993 - Directed Study (1.0 - 6.0 cr)
• ANTH 4994W - Directed Research [WI] (1.0 - 6.0 cr)

• ANTH 3xxx
  Take 0 or more course(s) from the following:
  • ANTH 3001 - Introduction to Archaeology [SOCS] (4.0 cr)
  • ANTH 3003 - Cultural Anthropology (3.0 cr)
  • ANTH 3004 - Great Controversies in Anthropology [SOCS, GP] (3.0 cr)
  • ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
  • ANTH 3006 - Humans and Aliens: Learning Anthropology through Science Fiction [GP] (3.0 cr)
  • ANTH 3008 - Introduction to Flintknapping (3.0 cr)
  • ANTH 3242W - The Body in Society [GP, SOCS] (3.0 cr)
  • ANTH 3221 - Field School (6.0 cr)
  • ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
  • ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
  • ANTH 3327W - Inca, Aztec & Maya Civilizations [HIS, WI] (3.0 cr)
  • ANTH 3301 - The Human Fossil Record (3.0 cr)
  • ANTH 3402 - Zooarchaeology Laboratory (3.0 cr)
  • ANTH 3405 - Human Skeletal Analysis (4.0 cr)
  • ANTH 3501 - Managing Museum Collections (3.0 cr)
  • ANTH 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
  • ANTH 3980 - Topics in Anthropology (3.0 cr)
  • ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  • ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
or HIST 3065 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
  • ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 3070W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
  • ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
  • ANTH 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
Capstone

Choose one of the following two options. Students who wish to undertake primary research should complete Option 1. Students wishing to acquire additional training through coursework should complete Option 2. Honors students seeking honors in Anthropology should complete Option 1, and enroll in ANTH 4013H. Students who double major and choose to complete the capstone requirement in their other major may waive the Anthropology BA capstone, and they do not need to replace the 4 credits.

Option 1

Students should enroll in ANTH 3913 at least one semester before taking ANTH 4013.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
- ANTH 3913 - Capstone Project Planning (1.0 cr)
- Take exactly 3 credit(s) from the following:
  - ANTH 4013 - Capstone Project (1.0 - 3.0 cr)

or
Option 2

Students should enroll in both courses in the same semester.
Take exactly 2 course(s) totaling 4 or more credit(s) from the following:
- ANTH 4093 - In-Class Capstone Project (1.0 cr)
  - with ANTH 4xxx
- or ANTH 5xxx

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
- ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
- ANTH 3034W - Roots Music in American Culture and Society [DSJ, WI] (3.0 cr)
- ANTH 3046W - Romance and Culture [GP, WI] (3.0 cr)
- ANTH 3047W - Anthropology of Sex, Gender and Sexuality [WI] (3.0 cr)
- ANTH 3049W - Anthropology of Social Class [WI] (3.0 cr)
- ANTH 3145W - Urban Anthropology [WI] (3.0 cr)
- ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
- ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
- ANTH 3327W - Inca, Aztec & Maya Civilizations [HIS, WI] (3.0 cr)
- ANTH 4003W - Contemporary Perspectives in Cultural Anthropology [WI] (3.0 cr)
- ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
- ANTH 4994W - Directed Research [WI] (1.0 - 6.0 cr)
- ANTH 5045W - Urban Anthropology [WI] (3.0 cr)
- ANTH 5327W - Inca, Aztec & Maya Civilizations [HIS, WI] (3.0 cr)
- ANTH 3015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
  - or ANTH 5015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
- ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
  - or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
- ANTH 3022W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
  - or ANTH 5022W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
- or ANTH 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
- or ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
- or HIST 3067W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
Twin Cities Campus
Anthropology Minor
Anthropology
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

Anthropology is the study of human beings and cultures throughout the world during the present and past. It is the study of who we are, and how we came to be that way. Anthropology is partly a natural science, partly a social science, and partly a humanistic study. Anthropology minors learn to compare and contrast the biological, social, and cultural similarities and differences of humans and their societies across the globe and develop a sophisticated understanding of the biological unity of our species.

Students who minor in the field are expected to take a minimum of one 1xxx-level course, and four upper-level (3xxx or higher) courses that have a common focus. A common focus usually corresponds with one of the four sub-fields of anthropology: biological anthropology (the evolutionary history of human and nonhuman primates), archaeology (the study of prehistoric and historic societies through their material culture), sociocultural anthropology (the study of the behavior of recent people in settings that range from unindustrialized societies to modern urban centers), and linguistic anthropology (the comparative study of languages and communication). The Anthropology Department website (http://cla.umn.edu/anthropology/ba-anthropology) offers several examples of course sequences designed to provide training in particular sub-fields. A minor in anthropology provides many opportunities for graduates. It is seen as a useful degree within many businesses, for instance industry consulting, environmental consulting, product development, and marketing, as well as the nonprofit sector. Students with anthropology degrees are known to possess unique observational and critical thinking skills; and, perhaps more than with any other degree, they are aware of the role that culture plays in identity, relationships, and decision-making.

An anthropology minor is also excellent preparation for professional schools in medicine, public health, nursing, and law. In sum, an anthropology minor offers a holistic education that, regardless of the job attained after graduation, provides a perspective on humanity that inspires a lifetime of engagement with the issues of importance to our globalized society.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in Anthropology, but not both.

Foundation Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
• ANTH 1002 - Cultural Heritage and Archaeology (4.0 cr)
• ANTH 1003W - Understanding Cultures [SOS, GP, WI] (4.0 cr)
or ANTH 1003V - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)

Electives
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
• ANTH 3001 - Introduction to Archaeology [SOCS] (4.0 cr)
• ANTH 3003 - Cultural Anthropology (3.0 cr)
• ANTH 3004 - Great Controversies in Anthropology [SOCS, GP] (3.0 cr)
• ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
• ANTH 3006 - Humans and Aliens: Learning Anthropology through Science Fiction [GP] (3.0 cr)
• ANTH 3008 - Introduction to Flintknapping (3.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3034W - Roots Music in American Culture and Society [DSJ, WI] (3.0 cr)
• ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 3043 - Art, Aesthetics and Anthropology (3.0 cr)
• ANTH 3046W - Romance and Culture [GP, WI] (3.0 cr)
• ANTH 3049W - Anthropology of Social Class [WI] (3.0 cr)
ANTH 3145W - Urban Anthropology [WI] (3.0 cr)
ANTH 3221 - Field School (6.0 cr)
ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
ANTH 3402 - Zooarchaeology Laboratory (3.0 cr)
ANTH 3501 - Managing Museum Collections (3.0 cr)
ANTH 3980 - Topics in Anthropology (3.0 cr)
ANTH 4001 - Advanced Method and Theory in Archaeology (3.0 cr)
ANTH 4003W - Contemporary Perspectives in Cultural Anthropology [WI] (3.0 cr)
ANTH 4007 - Laboratory Techniques in Archaeology (1.0 - 4.0 cr)
ANTH 4019 - Symbolic Anthropology (3.0 cr)
ANTH 4025 - Studies in Ethnographic Classics (3.0 cr)
ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
ANTH 4035 - Ethnographic Research Methods (3.0 cr)
ANTH 4047 - Anthropology of American Culture [SOCS] (3.0 cr)
ANTH 4069 - Historical Ecology & Anthropology of the Environment (3.0 cr)
ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
ANTH 4077 - Neanderthals: Biology and Culture of Humanity's Nearest Relative (3.0 cr)
ANTH 4101 - Decolonizing Archives (3.0 cr)
ANTH 4121 - Business Anthropology (3.0 cr)
ANTH 5008 - Advanced Flintknapping (3.0 cr)
ANTH 5009 - Human Behavioral Biology (3.0 cr)
ANTH 5041 - Ecological Anthropology (3.0 cr)
ANTH 5045W - Urban Anthropology [WI] (3.0 cr)
ANTH 5112 - Reconstructing Hominin Behavior (3.0 cr)
ANTH 5113 - Primate Evolution (3.0 cr)
ANTH 5221 - Anthropology of Material Culture (3.0 cr)
ANTH 5244 - Interpreting Ancient Bone (4.0 cr)
ANTH 5255 - Archaeology of Ritual and Religion (3.0 cr)
ANTH 5269 - Analysis of Stone Tool Technology (4.0 cr)
ANTH 5402 - Zooarchaeology Laboratory (3.0 cr)
ANTH 5403 - Quantitative Methods in Biological Anthropology (4.0 cr)
ANTH 5442 - Archaeology of the British Isles (3.0 cr)
ANTH 5448 - Applied Heritage Management (3.0 cr)
ANTH 5450 - Spatial Analysis in Anthropology: Research Design and Field Applications (3.0 cr)
ANTH 5500 - Topics in Anthropology (3.0 cr)
ANTH 5002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
ANTH 5009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
ANTH 5015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
or ANTH 5015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 5023 - Culture and Society of India [GP, SOCS] (3.0 cr)
or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
or ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
or HIST 3067W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
ANTH 5028 - Introduction to Historical Archaeology (3.0 cr)
or ANTH 5028 - Introduction to Historical Archaeology (3.0 cr)
ANTH 5055 - Archaeology of Ritual and Religion (3.0 cr)
or RELS 3254 - Archaeology of Ritual and Religion (3.0 cr)
ANTH 5327W - Inca, Aztec & Maya Civilizations [HIS, WI] (3.0 cr)
or ANTH 5327W - Inca, Aztec & Maya Civilizations [HIS, WI] (3.0 cr)
ANTH 5401 - The Human Fossil Record (3.0 cr)
or ANTH 5401 - The Human Fossil Record (3.0 cr)
ANTH 5405 - Human Skeletal Analysis (4.0 cr)
or ANTH 5405 - Human Skeletal Analysis (4.0 cr)
ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
• ANTH 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
  or MEST 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
• ANTH 4049 - Religion and Culture (3.0 cr)
  or RELS 4049 - Religion and Culture (3.0 cr)
• ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
  or EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)

**Directed Studies, Reading and Research Courses**
Courses must be taken for at least 3 credits to count toward this requirement.
Take at most 6 credit(s) from the following:
• ANTH 4991 - Independent Study (1.0 - 6.0 cr)
• ANTH 4993 - Directed Study (1.0 - 6.0 cr)
• ANTH 4994W - Directed Research [WI] (1.0 - 6.0 cr)
Twin Cities Campus
Art B.A.
Art Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 41 to 44
- Degree: Bachelor of Arts

The program provides instruction in the visual arts by emphasizing the development of visual awareness and expression through hands-on involvement in the creative process. In the preparatory studio courses, students become familiar with the various materials and concepts used to understand the nature of visual language. Students then choose additional courses from the four departmental areas of Drawing, Painting and Printmaking; Interdisciplinary Art and Social Practice; Photography and Moving Images; and Sculpture and Ceramics.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Art BA is ARTS.

At least 12 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students who wish to apply credits from art courses taken outside the University of Minnesota should contact the department's undergraduate adviser.

Students may earn no more than one degree from the Department of Art: a BA or a BFA or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Introduction to Contemporary Art and Theory or Art and Life
Note: ARTS 1002 can only count towards one major requirement.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ARTS 1001 - Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
  or ARTS 1001H - Honors Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
  or ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CIV] (3.0 cr)

Preparatory Courses
Note: ARTS 1002 can only count towards one Preparatory Courses course group.
Take exactly 3 course(s) totaling 11 - 12 credit(s) including exactly 3 sub-requirements(s) from the following:
- ARTS 1101 - Introduction to Drawing [AH] (4.0 cr)
  or ARTS 1102 - Introduction to Painting [AH] (4.0 cr)
or ARTS 1103 - Introduction to Printmaking: Relief, Screen and Digital Processes [AH] (4.0 cr)
or ARTS 1104 - Introduction to Drawing and Printmaking (4.0 cr)
or ARTS 1107 - Introduction to Digital Drawing [AH] (4.0 cr)

• Sculpture and Ceramics
  • ARTS 1801 - Introduction to Ceramics [AH] (4.0 cr)
or ARTS 1802 - Introduction to Sculpture [AH] (4.0 cr)
or ARTS 1803 - Introduction to Sculpture and Ceramics (4.0 cr)

• Photography and Moving Images
  • ARTS 1701 - Introduction to Photography [AH] (4.0 cr)
or ARTS 1704 - Introduction to Moving Images [AH] (4.0 cr)

• Interdisciplinary Art and Social Practice
  • ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CIV] (3.0 cr)

Art Electives
ARTS 1001/1001H and ARTS 1002 may not count towards the Electives requirement.
Take exactly 4 course(s) totaling 15 - 16 credit(s) from the following:

Lower-Division ARTS
Take 0 - 1 course(s) totaling 3 - 4 credit(s) from the following:
  • ARTS 1xxx

• Upper-Division ARTS
Take 3 - 4 course(s) totaling 12 or more credit(s) from the following:
  • ARTS 3xxx
  • ARTS 5xxx

Critical Theories and Their Construction From a Studio Perspective
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
or ARTS 3401V - Honors: Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)

Art History/Cultural Studies Elective
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

Lower-Division
Take 0 - 1 course(s) from the following:
  • AAS 1101 - Imagining Asian America [SOCS, DSJ] (3.0 cr)
  • AMES 1001 - Asian Film and Animation [AH, GP] (3.0 cr)
  • AMST 1511 - Americans Abroad: Rethinking Travel, Culture, & Empire [GP, HIS] (3.0 cr)
  • ARTH 1001 - Introduction to Art History: Prehistoric to Contemporary [AH] (4.0 cr)
  • ARTH 1002W - Why Art Matters [AH, GP, WI] (4.0 cr)
  • ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
  • CSCL 1001 - Introduction to Cultural Studies: Rhetoric, Power, Desire [AH, DSJ] (3.0 cr)
  • CSCL 1301WS - Reading Culture: Theory and Practice [AH, WI] (3.0 cr)
  • GDES 2399W - Design and its Discontents: Design, Society, Economy, and Culture [WI] (3.0 cr)
  • GER 1601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
  • ITAL 1837 - Imagining Italy: Italian and Italian-American Culture, History, and Society through Film [AH, GP] (4.0 cr)
  • JOUR 1501 - Digital Games and Society [AH, TS] (3.0 cr)
  • TH 1102 - Stage, Screen, Society: Performance in the Media Age [AH] (3.0 cr)

• Note: ARTH 1921W is a distinct class from CSCL 1201W/SCMC 1201W, but a student cannot get credit for more than 1 of these courses.
  • ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)
or CSCL 1201W - Cinema [AH, WI] (4.0 cr)
or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
  • CSCL 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
or SCMC 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)

• Upper-Division
Take 0 - 1 course(s) from the following:
  • ACL 5251 - Ethical Dilemmas and Legal Issues for Cultural Leaders (3.0 cr)
  • ACL 5252 - Arts Advocacy in the Political Landscape (2.0 cr)
  • AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
  • AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
  • AMES 3357 - Taiwan Film (3.0 cr)
  • AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
  • AMES 3456 - Japanese Film [GP] (3.0 cr)
  • AMES 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
  • AMES 3556 - Korean Film [AH, GP] (3.0 cr)
  • AMES 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
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<th>Course Code</th>
<th>Course Title</th>
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<td>Palestinian Literature and Film [GP, WI]</td>
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<td>AMES 5277</td>
<td>Space and Modernity in Asia</td>
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<td>AMES 5351</td>
<td>Chinese New Media</td>
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<td>Early Shanghai Film Culture</td>
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<td>AMES 5486</td>
<td>Images of &quot;Japan&quot;</td>
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<td>AMIN 3304</td>
<td>Indigenous Filmmakers [AH]</td>
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<td>Prince, Porn, and Public Space: The Cultural Politics of the Twin Cities</td>
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<td>Cultural Anthropology</td>
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<td>Humans and Aliens: Learning Anthropology through Science Fiction [GP]</td>
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<td>Roots Music in American Culture and Society [DSJ, WI]</td>
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<td>The Body in Society</td>
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<td>Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies</td>
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<td>The City in Visual Culture [GP, AH]</td>
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<td>History and Culture of European Cities [HIS, GP]</td>
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<td>Introduction to Urban Form and Theory [WI]</td>
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<td>Architecture: A Global and Cultural History</td>
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<td>Architecture Since World War II: Postwar Experimentation: Aesthetics and</td>
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<td>Introduction to East Asian Art [GP]</td>
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<td>Renaissance Art in Europe [AH]</td>
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<td>Baroque Art in Seventeenth Century Europe [AH]</td>
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<td>European Art of the Eighteenth Century: Rococo to Revolution [HIS]</td>
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<td>Art on Trial [AH, CIV]</td>
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<td>Art and the Environment [AH, ENV]</td>
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<td>Art Since 1945 [HIS]</td>
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<td>Art of the Film [AH, WI]</td>
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<td>Cinema Now [AH]</td>
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<td>Gender and Sexuality in Art Since 1863 [AH]</td>
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<td>Alternative Media: Video, Performance, Digital Art</td>
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<td>Twentieth Century Theory and Criticism</td>
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<td>Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday</td>
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<td>Life [AH, DSJ]</td>
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<td>Chicana/o and Latina/o Representation in Film [AH, DSJ]</td>
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<td>COMM 3263W</td>
<td>Media Literacy: Decoding Media Images and Messages [WI]</td>
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<td>COMM 3451W</td>
<td>Intercultural Communication: Theory and Practice [WI]</td>
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<td>COMM 3645W</td>
<td>How Pictures Persuade [WI]</td>
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<td>COMM 4235</td>
<td>Electronic Media and Ethnic Minorities--A World View</td>
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<td>COMM 4245</td>
<td>Critical Television Studies</td>
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<td>COMM 4263</td>
<td>Feminist Media Studies [DSJ]</td>
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<td>COMM 4291</td>
<td>New Telecommunication Media</td>
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<td>COMM 5211</td>
<td>Critical Media Studies: Theory and Methods</td>
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• ADES 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
or APST 5121 - History of Fashion, 19th to 21st Century (4.0 cr)
• AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
or AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
or HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
or ENGL 5597 - Seminar: Harlem Renaissance (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)
• AFRO 5182W [Inactive] [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
• AMES 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
• AMIN 3205 [Inactive] [AH] (3.0 cr)
or ANTH 3205 [Inactive] [AH] (3.0 cr)
or ARTH 3205 [Inactive] [AH] (3.0 cr)
or RELS 3322 [Inactive] [AH] (3.0 cr)
• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARCH 4423 - Gothic Architecture (3.0 cr)
or ARCH 5423 - Gothic Architecture (3.0 cr)
• ARCH 4424 - Renaissance Architecture (3.0 cr)
or ARCH 5424 - Renaissance Architecture (3.0 cr)
• ARCH 4425W - Baroque Architecture [WI] (3.0 cr)
or ARCH 5425 - Baroque Architecture (3.0 cr)
• ARCH 4432 - Modern Architecture (3.0 cr)
or ARCH 5432 - Modern Architecture (3.0 cr)
• ARCH 4434 - Contemporary Architecture (3.0 cr)
or ARCH 5434 - Contemporary Architecture (3.0 cr)
• ARCH 4435 - History of American Architecture (3.0 cr)
or ARCH 5435 - History of American Architecture (3.0 cr)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
or MEST 3009 - Medieval Art [AH] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or CNES 3182 - Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
or CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
• ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
or HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
• ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
or HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
• ARTH 3926 [Inactive] [AH] (3.0 cr)
or ARTH 5926 [Inactive] [AH] (3.0 cr)
• ARTH 5115 [Inactive] (3.0 cr)
or CNES 5185 [Inactive] (3.0 cr)
or ARTH 5192 [Inactive] (3.0 cr)
or CNES 5192 [Inactive] (3.0 cr)
• ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
or RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
• ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
• CNES 5961 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
or HIST 5961 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
or SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
or SCMC 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• CSCL 5302 - Aesthetics and the Valuation of Art (3.0 cr)
or CSDS 5302 {Inactive} (3.0 cr)
• GLBT 3305 {Inactive}[AH] (3.0 cr)
or GWSS 3305 {Inactive}[AH] (3.0 cr)
• GLOS 3322W {Inactive}[CIV, WI] (3.0 cr)
or SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• LA 3413 - Introduction to Landscape Architectural History [HIS, GP] (3.0 cr)
or LA 5413 - Introduction to Landscape Architectural History (3.0 cr)
• PHIL 4510 - Philosophy of the Individual Arts (3.0 cr)
or PHIL 5510 - Philosophy of the Individual Arts (3.0 cr)
• PHIL 4605 - Space and Time (3.0 cr)
or PHIL 5605 - Space and Time (3.0 cr)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)

Professional Practices in Art
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ARTS 3404W - Professional Practices in the Arts [WI] (3.0 cr)

Capstone
The capstone is a critique-based seminar that will provide a structured forum for production and critical discussion of student creative work. The process of creative production, critique and exhibition is a defining feature of the major experience and represents the culmination of students acquired knowledge and skill in conceptual development, creative production and in critical thinking in art practice.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major are still required to take the Art BA capstone.
• ARTS 5404 - BA Capstone and Exhibition (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
These courses also fulfill other requirements of the major
Take 0 - 1 course(s) from the following:
• AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
• AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (4.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3242W - Hero, Savage, or Equal? Representations of Non-Western Peoples in the Movies [WI] (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• ARTS 3206W - Art + Ecology [WI] (4.0 cr)
• ARTS 3404W - Professional Practices in the Arts [WI] (3.0 cr)
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
• CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• PHIL 3502W [Inactive] [WI] (3.0 cr)
• SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• AFRO 5182W [Inactive] [WI] (3.0 cr)
  or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
  or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
  or ARTS 3401V - Honors: Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
• ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
  or CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLOS 3322W [Inactive] [CIV, WI] (3.0 cr)
  or SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)

These courses do not fulfill other requirements of the major

Take 0 - 1 course(s) from the following:
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 3374V [Inactive] [AH, WI] (4.0 cr)
• AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
  or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
**Twin Cities Campus**

Art B.F.A.

**Art Department**

**College of Liberal Arts**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 68 to 74
- Degree: Bachelor of Fine Arts

The program provides in-depth instruction in the visual arts through a high concentration of coursework in the Department of Art. Admission is based on portfolio evaluation. The program is oriented toward professional practice or admission to a master's degree program.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

Students can apply to the BFA program after being admitted to the University of Minnesota. Incoming freshmen and transfer students will be invited to apply to the program after confirming their decision to attend the University of Minnesota and declaring the Art BA.

Current students can also apply in both fall and spring semesters. For application information, portfolio requirements, and deadlines, see the department website: cla.umn.edu/art.

Students should apply and be admitted to the BFA program before they have completed 60 credits. Students can apply to the BFA program twice, but a third application will not be considered.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students who wish to apply credits from art courses taken outside the University of Minnesota should contact the department's undergraduate advisor.

At least 24 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one degree from the Department of Art: a BA or a BFA or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Introduction to Contemporary Art and Theory or Art and Life**

Note: ARTS 1002 may only count towards one major requirement.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ARTS 1001 - Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
- ARTS 1001H - Honors Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
- ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CIV] (3.0 cr)

**Preparatory Courses**

Note: ARTS 1002 may only count towards one major requirement.

Take exactly 3 course(s) totaling 11 - 12 credit(s) including exactly 3 sub-requirements(s) from the following:

- ARTS 1101 - Introduction to Drawing [AH] (4.0 cr)
or ARTS 1102 - Introduction to Painting [AH] (4.0 cr)
or ARTS 1103 - Introduction to Printmaking: Relief, Screen and Digital Processes [AH] (4.0 cr)
or ARTS 1104 - Introduction to Drawing and Printmaking (4.0 cr)
or ARTS 1107 - Introduction to Digital Drawing [AH] (4.0 cr)

**Sculpture and Ceramics**
- ARTS 1801 - Introduction to Ceramics [AH] (4.0 cr)
or ARTS 1802 - Introduction to Sculpture [AH] (4.0 cr)
or ARTS 1803 - Introduction to Sculpture and Ceramics (4.0 cr)

**Photography and Moving Images**
- ARTS 1701 - Introduction to Photography [AH] (4.0 cr)
or ARTS 1704 - Introduction to Moving Images [AH] (4.0 cr)

**Interdisciplinary Art and Social Practice**
- ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CIV] (3.0 cr)

**Art Electives**
ARTS 1001/1001H and ARTS 1002 may not count towards the Electives requirement.
Take 9 or more course(s) totaling 34 or more credit(s) from the following:
Take 0 - 1 course(s) totaling 0 - 4 credit(s) from the following:
- ARTS 1xxx
Take 0 - 7 course(s) from the following:
- ARTS 3xxx

**Art History/Cultural Studies Elective**
At least 1 Art History/Cultural Studies Elective must be upper-division.
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:

**Lower-Division**
Take 0 - 1 course(s) from the following:
- AAS 1101 - Imagining Asian America [SOCS, DSJ] (3.0 cr)
- AMES 1001 - Asian Film and Animation [AH, GP] (3.0 cr)
- AMST 1511 - Americans Abroad: Rethinking Travel, Culture, & Empire [GP, HIS] (3.0 cr)
- ARTH 1001 - Introduction to Art History: Prehistoric to Contemporary [AH] (4.0 cr)
- ARTH 1002W - Why Art Matters [AH, GP, WI] (4.0 cr)
- ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
- CSCL 1001 - Reading Culture: Theory and Practice [AH, WI] (3.0 cr)
- GDES 2399W - Design and its Discontents: Design, Society, Economy, and Culture [WI] (3.0 cr)
- GER 1601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
- ITAL 1837 - Imagining Italy: Italian and Italian-American Culture, History, and Society through Film [AH, GP] (4.0 cr)
- JOUR 1501 - Digital Games and Society [AH, TS] (3.0 cr)
- TH 1102 - Stage, Screen, Society: Performance in the Media Age [AH] (3.0 cr)

**Note:** ARTH 1921W is a distinct class from CSCL 1201W/SCMC 1201W, but a student cannot get credit for more than 1 of these courses.
- ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)
or CSCL 1201W - Cinema [AH, WI] (4.0 cr)
or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
- CSCL 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
or SCMC 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)

**Upper-Division**
Take 1 - 2 course(s) from the following:
- ACL 5231 - Ethical Dilemmas and Legal Issues for Cultural Leaders (3.0 cr)
- ACL 5251 - Arts Advocacy in the Political Landscape (2.0 cr)
- AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
- AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
- AMES 3357 - Taiwan Film (3.0 cr)
- AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
- AMES 3456 - Japanese Film [GP] (3.0 cr)
- AMES 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
- AMES 3556 - Korean Film [AH, GP] (3.0 cr)
- AMES 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- AMES 3856W - Palestinian Literature and Film [GP, WI] (3.0 cr)
- AMES 5277 - Space and Modernity in Asia (3.0 cr)
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<td>Early Shanghai Film Culture</td>
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<td>AMES 5486</td>
<td>Images of &quot;Japan&quot;</td>
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<td>Prince, Porn, and Public Space: The Cultural Politics of the Twin Cities</td>
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• CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3334 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3352W - Queer Aesthetics & Queer Critique [LITR, DSJ, WI] (3.0 cr)
• CSCL 5305 - Vision and Visuality: An Intellectual History (3.0 cr)
• CSCL 5411 - Avant-Garde Cinema (4.0 cr)
• CSCL 5666 - Film Music: Theory, History, Practice (4.0 cr)
• DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
• ENGL 3020 - Studies in Narrative (3.0 cr)
• ENGL 3024 - The Graphic Novel (3.0 cr)
• ENGL 3040 - Studies in Film (3.0 cr)
• ENGL 3045 - Cinematic Seductions: Sex, Gender, Desire (3.0 cr)
• ENGL 3060 [Inactive] (3.0 cr)
• ENGL 5040 - Theories of Film (3.0 cr)
• FREN 3431 - Gender and Sexuality in Francophone Literature and Cinema (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• FRIT 3600 - The Renaissance (3.0 cr)
• FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
• FRIT 5850 [Inactive] (3.0 cr)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GER 5630 - Topics in German Cinema (3.0 cr)
• GLBT 3411 - History of Interiors and Furnishings: Ancient to 1750 [GP] (4.0 cr)
• ITAL 3837 - Imagining Italy: Italian and Italian-American Culture, History, and Society through Film [AH, GP] (4.0 cr)
• ITAL 3850 [Inactive] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
• JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
• JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
• LA 5203 - Ecological Dimensions of Space Making (6.0 cr)
• LA 5402 - Directed Studies in Landscape Architecture History and Theory (1.0 - 6.0 cr)
• MIMS 5910 - Topics in Moving Image Studies (2.0 - 4.0 cr)
• MST 5011 - Museum History and Philosophy (3.0 cr)
• MST 5170 - Topics in Museum Studies (1.0 - 4.0 cr)
• PDES 3910 - History and Future of Product Design (3.0 cr)
• PHIL 3502W [Inactive] (3.0 cr)
• PHIL 4501 [Inactive] (3.0 cr)
• PORT 3800 - Film Studies in Portuguese (3.0 cr)
• RUSS 3512 - Russian Art and Culture [AH, GP] (3.0 cr)
• SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
• SCMC 3910 - Topics in Studies in Cinema and Media Culture (3.0 cr)
• SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
• SCMC 5002 - Advanced Film Analysis (4.0 cr)
• SOC 3415 - Consumerism! The Sociology and Politics of Consumption (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3701 - Social Theory (4.0 cr)
• TH 3120 - Theatre: Theory and Practice (3.0 cr)
• TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
• TH 3172 - History of the Theatre: Age of Enlightenment to Present (3.0 cr)
• TH 5117 - Performance and Social Change (3.0 cr)
• AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr) or ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
• ADES 4121 - History of Fashion, 19th to 21st Century (4.0 cr) or APST 5121 - History of Fashion, 19th to 21st Century (4.0 cr)
• AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
or AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
or HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
or AFRO 5627 - Seminar: Harlem Renaissance (3.0 cr)
or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
or ENGL 5597 - Seminar: Harlem Renaissance (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)
• AFRO 5182W [Inactive] [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 5377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
or ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARTH 4423 - Gothic Architecture (3.0 cr)
or ARCH 4543 - Gothic Architecture (3.0 cr)
or ARCH 4424 - Renaissance Architecture (3.0 cr)
or ARCH 4542 - Renaissance Architecture (3.0 cr)
or ARCH 4425W - Baroque Architecture [WI] (3.0 cr)
or ARCH 4545 - Baroque Architecture (3.0 cr)
or ARCH 4432 - Modern Architecture (3.0 cr)
or ARCH 4542 - Modern Architecture (3.0 cr)
or ARCH 4434 - Contemporary Architecture (3.0 cr)
or ARCH 4544 - Contemporary Architecture (3.0 cr)
or ARCH 4435 - History of American Architecture (3.0 cr)
or ARCH 4545 - History of American Architecture (3.0 cr)
or ARTH 3009 - Medieval Art [AH] (3.0 cr)
or MEST 3009 - Medieval Art [AH] (3.0 cr)
or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
or ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
or CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
or ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
or HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
or ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
or HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 3926 [Inactive] [AH] (3.0 cr)
or ARTH 5926 [Inactive] (3.0 cr)
or ARTH 5115 [Inactive] (3.0 cr)
or CNES 5185 [Inactive] (3.0 cr)
or ARTH 5192 [Inactive] (3.0 cr)
or CNES 5192 [Inactive] (3.0 cr)
or ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
or RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
• ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
• HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  or HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
  or SCMC 3219 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
  or SCMC 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• CSCL 5302 - Aesthetics and the Valuation of Art (3.0 cr)
  or CSDS 5302 [Inactive] (3.0 cr)
• GLBT 3305 [Inactive] [AH] (3.0 cr)
  or GWSS 3305 [Inactive] [AH] (3.0 cr)
• GLOS 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
  or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• LA 3413 - Introduction to Landscape Architectural History [HIS, GP] (3.0 cr)
  or LA 5413 - Introduction to Landscape Architectural History (3.0 cr)
• PHIL 4510 - Philosophy of the Individual Arts (3.0 cr)
  or PHIL 5510 - Philosophy of the Individual Arts (3.0 cr)
• PHIL 4605 - Space and Time (3.0 cr)
  or PHIL 5605 - Space and Time (3.0 cr)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
  or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
  or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)

Professional Practices in Art
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ARTS 3404W - Professional Practices in the Arts [WI] (3.0 cr)

Critical Theories and Their Construction From a Studio Perspective
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
  or ARTS 3401V - Honors: Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)

Art Internship
Take exactly 1 course(s) totaling 1 - 3 credit(s) from the following:
• ARTS 3896 - Internship (1.0 - 3.0 cr)
  or ARTS 3499 - Internship at Katherine E. Nash Gallery (3.0 cr)

Capstone
The year-long capstone experience provides students with skills in critical evaluation of contemporary art and with the experience needed to build a strong portfolio in contemporary art practice. Both ARTS 5401W and 5407 must be taken concurrently with a 5xxx-level course, that count towards the Electives requirement. Students who double major and choose to complete the capstone requirement in their other major are still required to take the Art BFA capstone.
Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:

Concepts and Practices
ARTS 5401W is a writing-intensive and research-based course in contemporary art theory. The course provides students with the opportunity to do original research on contemporary artists and relate that experience to their own art practices.
• ARTS 5401W - BFA Seminar Capstone 1: Concepts and Practices in Art [WI] (3.0 cr)

Critique and Exhibition
ARTS 5407 is a critique-based seminar that will provide a structured forum for production and critical discussion of student creative work. The course will help students to verbally articulate their ideas, communicate their creative processes, and develop original art work. The course includes one-on-one and group critiques of independently produced creative work culminating in the BFA Thesis Exhibition in the Katherine E. Nash Gallery.
• ARTS 5407 - BFA Capstone 2: Critique and Exhibition (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:

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Information current as of September 02, 2020
These courses also fulfill other requirements of the major
Take 0 - 1 course(s) from the following:

- AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
- AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (4.0 cr)
- ANTH 3242W - Hero, Savage, or Equal? Representations of Non-Western Peoples in the Movies [WI] (3.0 cr)
- ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
- ARTS 3006W - Art + Ecology [WI] (4.0 cr)
- ARTS 3007W - Professional Practices in the Arts [WI] (3.0 cr)
- ARTS 5401W - Senior Seminar: Capstone 1: Concepts and Practices in Art [WI] (3.0 cr)
- COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
- CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
- CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
- CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
- GDES 4131W - History of Graphic Design [WI] (4.0 cr)
- GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
- PHIL 3502W [Inactive][WI] (3.0 cr)
- SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- AFRO 3182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
- AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
- ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
- RELS 3155W - Art of India [AH, GP, WI] (4.0 cr)
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
- RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
- ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
- ARTS 3401V - Honors: Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
- ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
- CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
- CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- GLOS 3322W [Inactive][CIV, WI] (3.0 cr)
- SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)

These courses do not fulfill other requirements of the major
Take 0 - 1 course(s) from the following:

- AAS 3409W - Asian American Women’s Cultural Production [AH, DSJ, WI] (3.0 cr)
- GWSS 3409W - Asian American Women’s Cultural Production [AH, DSJ, WI] (3.0 cr)
- GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
- GEOG 3374V [Inactive][AH, WI] (4.0 cr)
Twin Cities Campus
Art History B.A.
Art History
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 33 to 35
• Degree: Bachelor of Arts

Art history is the study of the visual world, both past and present. It looks closely at a wide array of images, objects, buildings, and sites in order to better understand human societies. Art history operates with the understanding that visual/material artifacts may speak more directly and deeply about a culture than its written record. Put another way, if a picture is worth a thousand words, then art history equips students to read it. This is called “visual literacy” and it is an invaluable skill in our increasingly visual world.

Students in art history learn to analyze a wide variety of artifacts from all geographic regions and historical eras, including our own. Not limited strictly to the so-called “fine arts,” art history seeks to understand visual and material culture more broadly: from paintings and sculpture, to architecture and urban design; from films and photographs, to ceramics and textiles; from scientific illustration and political posters, to performance art and street graffiti. Through engaging closely with these and other forms of visual expression, students of art history become adept practitioners of the following skills: visual analysis and interpretation, original research and careful argumentation, image-based thinking and communication, and clear and persuasive writing in a variety of modes (e.g., analytical, creative, and journalistic).

Engaging visual approaches to learning and thinking, art history prepares a diverse student body for a variety of professional tracks. Graduates from this major go on to enjoy careers in the following fields: visual arts (e.g., art criticism, art appraisal and sales, art therapy, fashion, interior design, museums, and conservation), the humanities (e.g., grant writing, historic preservation, and philanthropy), media and marketing (e.g., advertising, film, journalism, radio, and television), K-12 and post-secondary education (e.g., teaching and administration), information science and collections management (e.g., libraries and archives in public, non-profit, and corporate contexts), and medicine and law, two fields that have long prized art history alumni for their analytical precision, skills at information mastery, and “right-brain/left-brain” balance. For these and other reasons, students of art history go on to enjoy higher job satisfaction and lower unemployment rates over the course of their working lives than peers in vocational tracks.

Majors in art history are required to fulfill a variety of distribution requirements across geographic regions and historical eras (see below); one studio art class is also required for the major. Most classes have no prerequisites. The amount of required credits for the major makes it an attractive option for double-majors and transfer students. Students considering pursuing graduate-level work in the discipline should aim to take more than the required two 5xxx-level courses, with as many professors in the department as possible; they should also strongly consider making French or German their chosen foreign language.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Art History BA is ARTH.
Students are encouraged to take courses from a variety of instructors to ensure exposure to various approaches and methods.

Art history is an immensely broad discipline. It spans all eras of human production and expression, in all areas of the globe. To expose students to the variety of sub-fields within art history, and the ways in which these sub-fields examine different swaths of history and geography, the department requires all students to take classes satisfying different chronological and regional distributions. See the Art History Electives requirement for more details.

The department's curriculum is structured so that classes at the 1xxx-level provide a large-scale orientation to the discipline at large, as well as instruction in rudimentary skills of research and writing; classes at the 3xxx-level offer orientations to the disciplines sub-fields, as well as instruction in rudimentary and intermediary skills of research and writing; and classes at the 5xxx-level offer specialization within the sub-fields, as well as instruction in advanced skills of research and writing. Students are encouraged to begin taking classes at the 5xxx-level as soon as the second semester of their junior year to prepare for the capstone course.

At least 13 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BA or a minor in art history, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Art History Foundation
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- ARTH 1001 - Introduction to Art History: Prehistoric to Contemporary [AH] (4.0 cr)
- or ARTH 1002W - Why Art Matters [AH, GP, WI] (4.0 cr)
- or ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)

Art Practice
This course must be hands-on, and focused on the practice, rather than the history, of art. Other courses not on the list may fulfill this requirement, but only with prior approval from the undergraduate advisor or director of undergraduate studies.
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- ARTS 1101 - Introduction to Drawing [AH] (4.0 cr)
- ARTS 1102 - Introduction to Painting [AH] (4.0 cr)
- ARTS 1802 - Introduction to Sculpture [AH] (4.0 cr)
- ARTS 1103 - Introduction to Printmaking: Relief, Screen and Digital Processes [AH] (4.0 cr)
- ARTS 1704 - Introduction to Moving Images [AH] (4.0 cr)
- ARTS 1701 - Introduction to Photography [AH] (4.0 cr)
- ARTS 1801 - Introduction to Ceramics [AH] (4.0 cr)

Art History Electives
To achieve training across the discipline and its skills, students must meet the following distribution requirements:

Level Distribution Requirements:
(0-1) 1xxx-level course
(0-6) 3xxx-level courses
(2-8) 5xxx-level courses

Chronological and Geographic Distribution Requirements:
- Take at least 1 course from each of the three historical eras
- Take at least 1 course from at least two of the three geographical areas
Take exactly 8 course(s) totaling 24 or more credit(s) from the following:

Era I: Ancient to ca. 1300
Take 1 or more course(s) from the following:

Area: North America and Europe
Take 0 or more course(s) from the following:
- ARTH 3009 - Medieval Art [AH] (3.0 cr)
- or MEST 3009 - Medieval Art [AH] (3.0 cr)
- ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
- or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
- ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
- or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)
- ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
- or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

Area: Middle East and/or Islamic World
Take 0 or more course(s) from the following:
• ARTH 3018 - Art of the Ottoman Empire (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 5115 [inactive] (3.0 cr)
  or CNES 5185 [inactive] (3.0 cr)
• ARTH 5192 [inactive] (3.0 cr)
  or CNES 5192 [inactive] (3.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  or CNES 5783 - Art, Diplomacy and Empire (3.0 cr)
• ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• Area: South and/or East Asia
Take 0 or more course(s) from the following:
• ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
• ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• Area: Middle East and/or Islamic World
Take 0 or more course(s) from the following:
• ARTH 3018 - Art of the Ottoman Empire (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 5115 [inactive] (3.0 cr)
  or CNES 5185 [inactive] (3.0 cr)
• ARTH 5192 [inactive] (3.0 cr)
  or CNES 5192 [inactive] (3.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  or CNES 5783 - Art, Diplomacy and Empire (3.0 cr)
• ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• Era II: 1300 to 1800
Take 1 or more course(s) from the following:
• Area: North America and Europe
  Take 0 or more course(s) from the following:
  • ARTH 3309 - Renaissance Art in Europe [AH] (3.0 cr)
  • ARTH 3312 - European Art of the Eighteenth Century: Rococo to Revolution [HIS] (3.0 cr)
  • ARTH 3301 (inactive) (3.0 cr)
  • ARTH 5324 (inactive) (3.0 cr)
  • ARTH 5336 - Transformations in 17th Century Art: Caravaggio, Velazquez, and Bernini (3.0 cr)
  • FRIT 3600 - The Renaissance (3.0 cr)
  • ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
  • ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800, [AH, TS] (3.0 cr)
  • ARTH 3312 - European Art of the Eighteenth Century: Rococo to Revolution [HIS] (3.0 cr)
  • ARTH 3301 (inactive) (3.0 cr)
  • ARTH 5324 (inactive) (3.0 cr)
  • ARTH 5336 - Transformations in 17th Century Art: Caravaggio, Velazquez, and Bernini (3.0 cr)
  • FRIT 3600 - The Renaissance (3.0 cr)
• Area: Middle East and/or Islamic World
  Take 0 or more course(s) from the following:
  • ARTH 3018 - Art of the Ottoman Empire (3.0 cr)
  • ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
    or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
  • ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
    or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  • ARTH 5115 [inactive] (3.0 cr)
    or CNES 5185 [inactive] (3.0 cr)
  • ARTH 5192 [inactive] (3.0 cr)
    or CNES 5192 [inactive] (3.0 cr)
  • ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
    or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  • ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
    or CNES 5783 - Art, Diplomacy and Empire (3.0 cr)
  • ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
    or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  • AREA: South and/or East Asia
    Take 0 or more course(s) from the following:
    • ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
    • ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
    • ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
      or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
      or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
    • ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
      or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  • Era III: 1800 to Present
Take 1 or more course(s) from the following:
• AREA: South and/or East Asia
  Take 0 or more course(s) from the following:
  • ARTH 3018 - Art of the Ottoman Empire (3.0 cr)
  • ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
    or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
  • ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
    or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  • ARTH 5115 [inactive] (3.0 cr)
    or CNES 5185 [inactive] (3.0 cr)
  • ARTH 5192 [inactive] (3.0 cr)
    or CNES 5192 [inactive] (3.0 cr)
  • ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
    or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  • ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
    or CNES 5783 - Art, Diplomacy and Empire (3.0 cr)
  • ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
    or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
Area: North America and Europe
Take 0 or more course(s) from the following:
• ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)
• ARTH 3005 - American Art [AH] (4.0 cr)
• ARTH 3012 - 19th and 20th Century Art (3.0 cr)
• ARTH 3401 - Art on Trial [AH, GIV] (3.0 cr)
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• ARTH 3484 [Inactive] (4.0 cr)
• ARTH 3577 - Photo Nation: Photography in America [AH] (3.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• ARTH 3929 - Cinema Now [AH] (3.0 cr)
• ARTH 5411 - Gender and Sexuality in Art Since 1863 (3.0 cr)
• ARTH 5413 - Alternative Media: Video, Performance, Digital Art (3.0 cr)
• ARTH 5417 - Twentieth Century Theory and Criticism (3.0 cr)
• ARTH 5466 - Contemporary Art (3.0 cr)
• ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
  or AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
• ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
  or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)
  or AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
• ARTH 3926 [Inactive] [AH] (3.0 cr)
  or ARTH 5926 [Inactive] (3.0 cr)
• Area: Middle East and/or Islamic World
Take 0 or more course(s) from the following:
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• ARTH 5466 - Contemporary Art (3.0 cr)
• ARTH 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• Area: South and/or East Asia
Take 0 or more course(s) from the following:
• ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• ARTH 5466 - Contemporary Art (3.0 cr)
• ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
  or RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
• Courses Requiring Advising Appointment for Application to the Distribution Requirements
The below courses are applicable to the distribution requirements described above, but vary in how they may be applied. Some courses span across time periods and geographic/cultural areas. Consult with the program advisor or director of undergraduate studies to determine which requirements these courses fulfill.
Take 0 or more course(s) from the following:
• ARTH 1001 - Introduction to Art History: Prehistoric to Contemporary [AH] (4.0 cr)
• ARTH 1002W - Why Art Matters [AH, GP, WI] (4.0 cr)
• ARTH 19xx - Freshman Seminar
• ARTH 3940 - Topics in Art History (1.0 - 4.0 cr)
• ARTH 5766 - Chinese Painting (3.0 cr)
• ARTH 5785 - Art of Islamic Iran (3.0 cr)
• ARTH 5930 - Junior-Senior Seminar (3.0 cr)
• ARTH 5950 - Topics: Art History (3.0 cr)
• ARTH 3205 [Inactive] [AH] (3.0 cr)
  or AMIN 3205 [Inactive] [AH] (3.0 cr)
  or ANTH 3205 [Inactive] [AH] (3.0 cr)
  or RELS 3322 [Inactive] [AH] (3.0 cr)
• Directed Museum Experience, Study, or Research
Take at most 3 credit(s) from the following:
• ARTH 3896 - Directed Professional Experience (1.0 - 2.0 cr)
• ARTH 3993 - Directed Study (1.0 - 4.0 cr)
• ARTH 5993 - Directed Study (1.0 - 4.0 cr)
• **ARTH 5994** - Directed Research (1.0 - 4.0 cr)

**Capstone**

Students are required to develop, research, and write a senior capstone paper (approximately 15 pages), typically based on one of their 5xxx-level ArtI courses. The Art History capstone will demonstrate student mastery over chosen subject matter, as well as the abilities both to define a question or problem within a chosen field (this may be an historical, intellectual, interpretive, or some other question/problem), and to address it through research, analysis, and argumentation.

To enroll in the course, students need formal permission from the advisor. It is recommended that students take their ARTH 5xxx course at least one semester prior to taking ARTH 3971W/V. Students who double major and choose to complete the capstone requirement in their other major may waive the Art History BA capstone, and they do not need to replace the 3 credits.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- **ARTH 3971W** - Art History Capstone [WI] (3.0 cr)
- **ARTH 3971V** - Honors: Art History Capstone [WI] (3.0 cr)

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- **ARTH 3921W** - Art of the Film [AH, WI] (4.0 cr)
- **AMES 3014W** - Art of India [AH, GP, WI] (4.0 cr)
  - or **ARTH 3014W** - Art of India [AH, GP, WI] (4.0 cr)
  - or **RELS 3415W** - Art of India [AH, GP, WI] (4.0 cr)
- **ARTH 3015W** - Art of Islam [AH, GP, WI] (4.0 cr)
  - or **RELS 3706W** - Art of Islam [AH, GP, WI] (4.0 cr)
- **ARTH 3971W** - Art History Capstone [WI] (3.0 cr)
- **ARTH 3971V** - Honors: Art History Capstone [WI] (3.0 cr)
Twin Cities Campus
Art History Minor
Art History
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 14 to 20

Art history is the study of the visual world, both past and present. It looks closely at a wide array of images, objects, buildings, and sites in order to better understand human societies. Art history operates with the understanding that visual/material artifacts may speak more directly and deeply about a culture than its written record. Put another way, if a picture is worth a thousand words, then Art History equips students to read it. This is called "visual literacy" and it is an invaluable skill in our increasingly visual world. Students in art history learn to analyze a wide variety of artifacts from all geographic regions and historical eras, including our own. Not limited strictly to the so-called "fine arts," art history seeks to understand visual and material culture more broadly: from paintings and sculpture, to architecture and urban design; from films and photographs, to ceramics and textiles; from scientific illustration and political posters, to performance art and street graffiti. Through engaging closely with these and other forms of visual expression, students of art history become adept practitioners of the following skills: visual analysis and interpretation, original research and careful argumentation, image-based thinking and communication, and clear and persuasive writing in a variety of modes (e.g., analytical, creative, and journalistic). Engaging visual approaches to learning and thinking, art history prepares a diverse student body for a variety of professional tracks, including the visual arts (e.g., art criticism, art appraisal and sales, art therapy, fashion, interior design, museums, and conservation), the humanities (e.g., grant writing, historic preservation, and philanthropy), media and marketing (e.g., advertising, film, journalism, radio, and television), K-12 and post-secondary education (e.g., teaching and administration), information science and collections management (e.g., libraries and archives in public, non-profit, and corporate contexts), and medicine and law, two fields that have long prized art history alumni for their analytical precision, skills at information mastery, and "right-brain/left-brain" balance. For these and other reasons, students of art history go on to enjoy higher job satisfaction and lower unemployment rates over the course of their working lives than peers in vocational tracks.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in art history, but not both.

Minor Courses
To achieve training across the discipline and its skills, students must meet the following distribution requirements:

Level Distribution Requirements:
(0-4) 3xxx-level courses
(1-5) 5xxx-level courses

Chronological and Geographic Distribution Requirements:
- Take at least 1 course from at least two of the three historical eras
- Take at least 1 course from at least two of the three geographical areas
Take exactly 5 course(s) totaling 14 or more credit(s) from the following:

Era I: Ancient to ca. 1300
Take 0 or more course(s) from the following:
Area: North America and Europe
Take 0 or more course(s) from the following:
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
  or MEST 3009 - Medieval Art [AH] (3.0 cr)
• ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
  or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
  or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)
• ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• **Area: Middle East and/or Islamic World**

  Take 0 or more course(s) from the following:
  - ARTH 3018 - Art of the Ottoman Empire (3.0 cr)
  - ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  - ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP, WI] (3.0 cr)
  - or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP, WI] (3.0 cr)
  - or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  - ARTH 5115 (Inactive) (3.0 cr)
  - or CNES 5115 (Inactive) (3.0 cr)
  - ARTH 5192 (Inactive) (3.0 cr)
  - or CNES 5192 (Inactive) (3.0 cr)
  - ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  - or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)
  - or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• **Area: South and/or East Asia**

  Take 0 or more course(s) from the following:
  - ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
  - ARTH 5765 - Early Chinese Art (3.0 cr)
  - ARTH 5765W - Early Chinese Art [AH] (3.0 cr)
  - or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
  - or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
  - ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  - or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• **Era II: ca. 1300 to 1800**

  Take 0 or more course(s) from the following:

  **Area: North America and Europe**

  Take 0 or more course(s) from the following:
  - ARTH 3309 - Renaissance Art in Europe [AH] (3.0 cr)
  - ARTH 3311 - Baroque Art in Seventeenth Century Europe [AH] (3.0 cr)
  - ARTH 3312 - European Art of the Eighteenth Century: Rococo to Revolution [HIS] (3.0 cr)
  - ARTH 5301 (Inactive) (3.0 cr)
  - ARTH 5324 (Inactive) (3.0 cr)
  - or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  - or HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
  - or RELS 3612 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  - or RELS 5612 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  - ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  - or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)

• **Area: Middle East and/or Islamic World**

  Take 0 or more course(s) from the following:
  - ARTH 3018 - Art of the Ottoman Empire (3.0 cr)
  - or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  - or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
  - ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  - or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)

• **Area: South and/or East Asia**

  Take 0 or more course(s) from the following:
  - ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
  - ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  - or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
  - or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
  - ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
  - or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)

• **Era III: 1800 to Present**

  Take 0 or more course(s) from the following:

  **Area: North America and Europe**

  Take 0 or more course(s) from the following:
  - ARTH 3309 - Renaissance Art in Europe [AH] (3.0 cr)
  - ARTH 3311 - Baroque Art in Seventeenth Century Europe [AH] (3.0 cr)
  - ARTH 3312 - European Art of the Eighteenth Century: Rococo to Revolution [HIS] (3.0 cr)
  - ARTH 5301 (Inactive) (3.0 cr)
  - ARTH 5324 (Inactive) (3.0 cr)
  - or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  - or HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
  - or RELS 3612 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  - or RELS 5612 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  - ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  - or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)

  **Area: Middle East and/or Islamic World**

  Take 0 or more course(s) from the following:
  - ARTH 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (3.0 cr)
  - ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  - or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
  - ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
  - or ARTH 8783 - Art, Diplomacy, and Empire (3.0 cr)

  **Area: South and/or East Asia**

  Take 0 or more course(s) from the following:
  - ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
  - ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  - or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
  - or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
  - ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
  - or RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
Take 0 or more course(s) from the following:

**Area: North America and Europe**

Take 0 or more course(s) from the following:

- ARTH 3005 - American Art [AH] (4.0 cr)
- ARTH 3012 - 19th and 20th Century Art (3.0 cr)
- ARTH 3401 - Art on Trial [AH, CIV] (3.0 cr)
- ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
- ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
- ARTH 3484 \( \text{Inactive} \) (4.0 cr)
- ARTH 3577 - Photo Nation: Photography in America [AH] (3.0 cr)
- ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
- ARTH 3929 - Cinema Now [AH] (3.0 cr)
- ARTH 3926 \( \text{Inactive} \)[AH] (3.0 cr)  
  or ARTH 5926 \( \text{Inactive} \) (3.0 cr)
- ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)  
  or AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
- ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)  
  or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)  
  or AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
- ARTH 3926 \( \text{Inactive} \)[AH] (3.0 cr)  
  or ARTH 5926 \( \text{Inactive} \) (3.0 cr)

**Area: Middle East and/or Islamic World**

Take 0 or more course(s) from the following:

- ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
- ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
- ARTH 5466 - Contemporary Art (3.0 cr)
- ARTH 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (3.0 cr)
- ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)  
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)

**Area: South and/or East Asia**

Take 0 or more course(s) from the following:

- ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
- ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
- ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
- ARTH 5466 - Contemporary Art (3.0 cr)
- ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)  
  or AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)  
  or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
- ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)  
  or RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)

**Courses Requiring Advising Appointment for Application to the Distribution Requirements**

The below courses are applicable to the distribution requirements described above, but vary in how they may be applied. Some courses span across time periods and geographic/cultural areas. Consult with the program advisor or director of undergraduate studies to determine which requirements these courses fulfill.

Take 0 or more course(s) from the following:

- ARTH 3940 - Topics in Art History (1.0 - 4.0 cr)
- ARTH 5766 - Chinese Painting (3.0 cr)
- ARTH 5785 - Art of Islamic Iran (3.0 cr)
- ARTH 5930 - Junior-Senior Seminar (3.0 cr)
- ARTH 5950 - Topics: Art History (3.0 cr)
- ARTH 3205 \( \text{Inactive} \)[AH] (3.0 cr)  
  or AMIN 3205 \( \text{Inactive} \)[AH] (3.0 cr)  
  or ANTH 3205 \( \text{Inactive} \)[AH] (3.0 cr)
  or RELS 3322 \( \text{Inactive} \)[AH] (3.0 cr)

**Directed Museum Experience, Study, or Research**

Take at most 3 credit(s) from the following:

- ARTH 3896 - Directed Professional Experience (1.0 - 2.0 cr)
- ARTH 3993 - Directed Study (1.0 - 4.0 cr)
- ARTH 5993 - Directed Study (1.0 - 4.0 cr)
- ARTH 5994 - Directed Research (1.0 - 4.0 cr)
Twin Cities Campus
Art Minor
Art Department
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 19 to 24

The minor introduces students to the creative process and visual thinking required in art.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn no more than one undergraduate degree in the Department of Art: a BA or a BFA or a minor.

Concepts in Visual Arts
Only one of these courses can count towards the minor requirements.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ARTS 1001 - Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
  or ARTS 1001H - Honors Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
  or ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CIV] (3.0 cr)

Core Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- ARTS 1101 - Introduction to Drawing [AH] (4.0 cr)
- ARTS 1102 - Introduction to Painting [AH] (4.0 cr)
- ARTS 1103 - Introduction to Printmaking: Relief, Screen and Digital Processes [AH] (4.0 cr)
- ARTS 1107 - Introduction to Digital Drawing [AH] (4.0 cr)
- ARTS 1701 - Introduction to Photography [AH] (4.0 cr)
- ARTS 1704 - Introduction to Moving Images [AH] (4.0 cr)
- ARTS 1801 - Introduction to Ceramics [AH] (4.0 cr)
- ARTS 1802 - Introduction to Sculpture [AH] (4.0 cr)
- ARTS 1803 - Introduction to Sculpture and Ceramics (4.0 cr)

Art History/Cultural Studies Elective
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- ACL 5231 - Ethical Dilemmas and Legal Issues for Cultural Leaders (3.0 cr)
- ACL 5251 - Arts Advocacy in the Political Landscape (2.0 cr)
- AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
- AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
- AMES 3357 - Taiwan Film (3.0 cr)
- AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
- AMES 3456 - Japanese Film [GP] (3.0 cr)
- AMES 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
- AMES 3556 - Korean Film [AH, GP] (3.0 cr)
- AMES 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- AMES 3856W - Palestinian Literature and Film [GP, WI] (3.0 cr)
- AMES 5277 - Space and Modernity in Asia (3.0 cr)
- AMES 5351 - Chinese New Media (3.0 cr)
- AMES 5359 - Early Shanghai Film Culture (3.0 cr)
- AMES 5486 - Images of "Japan" (3.0 cr)
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- AMST 3112 - Prince, Porn, and Public Space: The Cultural Politics of the Twin Cities in the 1980s [DSJ, HIS] (3.0 cr)
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (4.0 cr)
- ANTH 3003 - Cultural Anthropology (3.0 cr)
- ANTH 3006 - Humans and Aliens: Learning Anthropology through Science Fiction [GP] (3.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3034W - Roots Music in American Culture and Society [DSJ, WI] (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 3043 - Art, Aesthetics and Anthropology (3.0 cr)
• ANTH 4071 [Inactive] (3.0 cr)
• ANTH 5444 [Inactive] (4.0 cr)
• ANTH 5446 [Inactive] (3.0 cr)
• ARCH 3722 - The City in Visual Culture [GP, AH] (3.0 cr)
• ARCH 4428 - History and Culture of European Cities [HIS, GP] (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
• ARCH 5410 - Topics in Architectural History (3.0 cr)
• ARCH 5412 - Architecture: A Global and Cultural History (3.0 cr)
• ARCH 5446 - Architecture Since World War II: Postwar Experimentation: Aesthetics and Politics of Architecture (3.0 cr)
• ARTH 3005 - American Art [AH] (4.0 cr)
• ARTH 3012 - 19th and 20th Century Art (3.0 cr)
• ARTH 3013 - Introduction to Asian Art [GP] (3.0 cr)
• ARTH 3309 - Renaissance Art in Europe [AH] (3.0 cr)
• ARTH 3311 - Baroque Art in Seventeenth Century Europe [AH] (3.0 cr)
• ARTH 3312 - European Art of the Eighteenth Century: Rococo to Revolution [HIS] (3.0 cr)
• ARTH 3401 - Art on Trial [AH, CIV] (3.0 cr)
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• ARTH 3484 [Inactive] (4.0 cr)
• ARTH 3577 - Photo Nation: Photography in America [AH] (3.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• ARTH 3929 - Cinema Now [AH] (3.0 cr)
• ARTH 3940 - Topics in Art History (1.0 - 4.0 cr)
• ARTH 3896 - Directed Professional Experience (1.0 - 2.0 cr)
• ARTH 3993 - Directed Study (1.0 - 4.0 cr)
• ARTH 5301 [Inactive] (3.0 cr)
• ARTH 5324 [Inactive] (3.0 cr)
• ARTH 5411 - Gender and Sexuality in Art Since 1863 (3.0 cr)
• ARTH 5413 - Alternative Media: Video, Performance, Digital Art (3.0 cr)
• ARTH 5417 - Twentieth Century Theory and Criticism (3.0 cr)
• ARTH 5466 - Contemporary Art (3.0 cr)
• ARTH 5575 [Inactive] (3.0 cr)
• ARTH 5765 - Early Chinese Art (3.0 cr)
• ARTH 5766 - Chinese Painting (3.0 cr)
• ARTH 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (3.0 cr)
• ARTH 5785 - Art of Islamic Iran (3.0 cr)
• ARTH 5950 - Topics: Art History (3.0 cr)
• ARTH 5993 - Directed Study (1.0 - 4.0 cr)
• ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
• CHIC 3213 [Inactive] [AH, DSJ] (3.0 cr)
• CHIC 3221 - Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)
• CHIC 3223 - Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
• COMM 3921W - Art of the Film [AH, WI] (4.0 cr)
• COMM 3929 - Cinema Now [AH] (3.0 cr)
• COMM 3940 - Topics in Art History (1.0 - 4.0 cr)
• COMM 3896 - Directed Professional Experience (1.0 - 2.0 cr)
• COMM 3993 - Directed Study (1.0 - 4.0 cr)
• COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
• COMM 5221 - Genre and Transnational Cinemas [GP] (4.0 cr)
• COMM 5212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
• COMM 5221 - On Television [CIV] (3.0 cr)
• COMM 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• COMM 5334 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
• COMM 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• COMM 3352W - Queer Aesthetics & Queer Critique [LITR, DSJ, WI] (3.0 cr)
• COMM 5305 - Vision and Visuality: An Intellectual History (3.0 cr)
• COMM 5411 - Avant-Garde Cinema (4.0 cr)
• CSCL 5666 - Film Music: Theory, History, Practice (4.0 cr)
• DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
• ENGL 3020 - Studies in Narrative (3.0 cr)
• ENGL 3024 - The Graphic Novel (3.0 cr)
• ENGL 3040 - Studies in Film (3.0 cr)
• ENGL 3045 - Cinematic Seductions: Sex, Gender, Desire (3.0 cr)
• ENGL 3060 [Inactive] (3.0 cr)
• ENGL 5040 - Theories of Film (3.0 cr)
• FREN 3431 - Gender and Sexuality in Francophone Literature and Cinema (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• FRIT 3600 - The Renaissance (3.0 cr)
• FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
• FRIT 5850 [Inactive] (3.0 cr)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GER 5630 - Topics in German Cinema (3.0 cr)
• GLBT 3411 [Inactive] (3.0 cr)
• GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
• GWSS 3306 - Pop Culture Women [AH, DSJ] (3.0 cr)
• GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
• GWSS 4390 [Inactive] (3.0 cr)
• GWSS 5390 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)
• IDES 3161 - History of Interiors and Furnishings: Ancient to 1750 [GP] (4.0 cr)
• IDES 3162 - History of Interiors and Furnishings: 1750 to Present [HIS] (4.0 cr)
• ITAL 3837 - Imagining Italy: Italian and Italian-American Culture, History, and Society through Film [AH, GP] (4.0 cr)
• ITAL 3850 [Inactive] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
• JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
• JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
• LA 5203 - Ecological Dimensions of Space Making (6.0 cr)
• LA 5402 - Directed Studies in Landscape Architecture History and Theory (1.0 - 6.0 cr)
• MIMS 3910 - Topics in Moving Image Studies (2.0 - 4.0 cr)
• MST 5011 - Museum History and Philosophy (3.0 cr)
• MST 5170 - Topics in Museum Studies (1.0 - 4.0 cr)
• PDES 3705 - History and Future of Product Design (3.0 cr)
• PHIL 3502W [Inactive] [WI] (3.0 cr)
• PHIL 4501 [Inactive] (3.0 cr)
• PORT 3800 - Film Studies in Portuguese (3.0 cr)
• RUSS 3512 - Russian Art and Culture [AH, GP] (3.0 cr)
• SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
• SCMC 3910 - Topics in Studies in Cinema and Media Culture (3.0 cr)
• SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
• SCMC 5002 - Advanced Film Analysis (4.0 cr)
• SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3701 - Social Theory (4.0 cr)
• TH 3120 - Theatre: Theory and Practice (3.0 cr)
• TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
• TH 3172 - History of the Theatre: Age of Enlightenment to Present (3.0 cr)
• TH 5117 - Performance and Social Change (3.0 cr)
• AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
  or ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
• APST 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
  or APST 5121 - History of Fashion, 19th to 21st Century (4.0 cr)
• AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
  or AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
  or HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
  or AFRO 5627 - Seminar: Harlem Renaissance (3.0 cr)
  or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
  or ENGL 5597 - Seminar: Harlem Renaissance (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)

• AFRO 5182W [inactive] [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)

• AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)

• AMES 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)

• AMIN 3205 [inactive] [AH] (3.0 cr)
or ANTH 3205 [inactive] [AH] (3.0 cr)
or ARTH 3205 [inactive] [AH] (3.0 cr)
or RELS 3322 [inactive] [AH] (3.0 cr)

• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 3402W - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or ANTH 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or ARTH 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)

• ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)

• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 4423 - Gothic Architecture (3.0 cr)
or ARCH 4424 - Renaissance Architecture (3.0 cr)
or ARCH 4425W - Baroque Architecture [WI] (3.0 cr)
or ARCH 4425 - Baroque Architecture (3.0 cr)
or ARCH 4432 - Modern Architecture (3.0 cr)
or ARCH 4432W - Modern Architecture [WI] (3.0 cr)
or ARCH 4434 - Contemporary Architecture (3.0 cr)
or ARCH 4434W - Contemporary Architecture [WI] (3.0 cr)
or ARCH 5432 - Modern Architecture (3.0 cr)
or ARCH 5432W - Modern Architecture [WI] (3.0 cr)
or ARTH 3009 - Medieval Art [AH] (3.0 cr)
or MEST 3009 - Medieval Art [AH] (3.0 cr)
or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
or ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
or CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
or ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
or HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
or ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
or HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 3926 [inactive] [AH] (3.0 cr)
or ARTH 5926 [inactive] (3.0 cr)
or ARTH 5115 [inactive] (3.0 cr)
or CNES 5185 [inactive] (3.0 cr)
or ARTH 5192 [inactive] (3.0 cr)
or CNES 5192 [inactive] (3.0 cr)
or ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
or RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
or ARTH 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
or CNES 5787 - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (3.0 cr)
or ARTH 5793 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
or HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
or CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
or SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
or CSCL 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)

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or SCMC 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• CSCL 5302 - Aesthetics and the Valuation of Art (3.0 cr)
or CSDS 5302 [Inactive] (3.0 cr)
• GLBT 3305 [Inactive] [AH] (3.0 cr)
or GWSS 3305 [Inactive] [AH] (3.0 cr)
• GLOS 3322W [Inactive] [CIV, WI] (3.0 cr)
or SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• LA 3413 - Introduction to Landscape Architectural History [HIS, GP] (3.0 cr)
or LA 5413 - Introduction to Landscape Architectural History (3.0 cr)
• PHIL 4510 - Philosophy of the Individual Arts (3.0 cr)
or PHIL 5510 - Philosophy of the Individual Arts (3.0 cr)
• PHIL 4605 - Space and Time (3.0 cr)
or PHIL 5605 - Space and Time (3.0 cr)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)

Electives
ARTS 1001/1001H and ARTS 1002 may not count towards the Electives requirement.
Take exactly 3 course(s) totaling 9 - 12 credit(s) from the following:
Take 0 - 1 course(s) totaling 0 - 4 credit(s) from the following:
• ARTS 1xxx
• Take 2 - 3 course(s) totaling 6 - 12 credit(s) from the following:
  • ARTS 3xxx
  • ARTS 5xxx
Twin Cities Campus
Asian American Studies Minor
Global Studies Department
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15

The minor focuses on the history, politics, and culture of Americans of Asian descent. Courses explore the diversity of Asian American communities, and the history and present conditions of racial formation in the United States and other parts of the Americas. The minor draws from courses in a number of disciplines and academic approaches and encourages social awareness, critical thinking, the development of new perspectives, and artistic appreciation. Courses included in the minor allow students to develop their knowledge of Asian American issues in many different contexts. Some courses emphasize an in-depth study of Asian American history, literature and culture, social issues, politics, and psychology. Others include significant attention to Asian American Studies topics in the course of broader discussions.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students interested in the minor should make an appointment with the Asian American Studies director (778 Social Sciences Building, 612-625-4813, aast@umn.edu).

Students may request credit towards the minor for other courses with Asian American Studies content by submitting a course syllabus and proof of completion to the Asian American Studies director.

A given course may only count towards one minor requirement.

Students may combine the Asian American Studies Minor with any other major or minor.

Core Course
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• AAS 3271 - Learning in the Asian American Community (3.0 cr)
• AAS 3601W - War and Empire: Asian American Perspectives [GP, WI] (3.0 cr)
• AAS 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
  or AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
• AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
  or ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
• AAS 3311 - Asian American Theater (3.0 cr)
  or TH 3311 - Asian American Theater (3.0 cr)
• AAS 3341 - Asian American Images [AH, DSJ] (3.0 cr)
  or COMM 3341 - Asian American Images [AH, DSJ] (3.0 cr)
• AAS 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
  or COMM 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
• AAS 3361 - Asian Americans and Food (3.0 cr)
  or AMST 3361 - Asian Americans and Food (3.0 cr)
• AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
  or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• AAS 3503 - Asian American Identities, Families, & Communities [SOS, DSJ] (3.0 cr)
  or SOC 3503 - Asian American Identities, Families & Communities [SOC, DSJ] (3.0 cr)
  or SOC 3503H - Honors: Asian American Identities, Families & Communities [SOC, DSJ] (3.0 cr)
• AAS 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)
  or HIST 3877 - Asian American History, 1850-present [HIS, DSJ] (3.0 cr)
• AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
  or ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)

Elective Courses

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Take 12 or more credit(s) from the following:

**Lower-Division**
Take 0 - 1 course(s) totaling 0 - 3 credit(s) from the following:
- AAS 1101 - Imagining Asian America [SOCS, DSJ] (3.0 cr)
- AAS 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)

**Upper-Division**
Take 9 - 12 credit(s) from the following:
- AAS 3271 - Learning in the Asian American Community (3.0 cr)
- AAS 3601W - War and Empire: Asian American Perspectives [GP, WI] (3.0 cr)
- AAS 3920 - Topics in Asian American Studies (2.0 - 4.0 cr)
- AAS 3993 - Directed Studies in Asian American Studies (1.0 - 9.0 cr)
- AAS 5993 - Directed Readings (1.0 - 4.0 cr)
- AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- AAS 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- or AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
- or SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
- AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
- or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [DSJ, WI] (3.0 cr)
- AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
- or ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
- AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- or ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- or GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- or GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- AAS 3311 - Asian American Theater (3.0 cr)
- or TH 3311 - Asian American Theater (3.0 cr)
- AAS 3341 - Asian American Images [AH, DSJ] (3.0 cr)
- or COMM 3341 - Asian American Images [AH, DSJ] (3.0 cr)
- AAS 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
- or COMM 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
- AAS 3361 - Asian Americans and Food (3.0 cr)
- or AMST 3361 - Asian Americans and Food (3.0 cr)
- AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- AAS 3483 - Hmong History Across the Globe (3.0 cr)
- or AMES 3776 - Hmong History Across the Globe (3.0 cr)
- or HIST 3483 - Hmong History Across the Globe (3.0 cr)
- AAS 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
- or HIST 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
- AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
- or SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
- or SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
- AAS 3862 - American Immigration History [HS, DSJ] (3.0 cr)
- or CHIC 3862 - American Immigration History [HS, DSJ] (3.0 cr)
- or HIST 3862 - American Immigration History [HS, DSJ] (3.0 cr)
- AAS 3866 - Arab American Experiences (3.0 cr)
- or AMES 3866 - Arab American Experiences (3.0 cr)
- AAS 3875W - Comparative Race and Ethnicity in U.S. History [HS, DSJ, WI] (3.0 cr)
- or HIST 3875W - Comparative Race and Ethnicity in US History [HS, DSJ, WI] (3.0 cr)
- AAS 3877 - Asian American History, 1850 to Present [HS, DSJ] (3.0 cr)
- or HIST 3877 - Asian American History, 1850-Present [HS, DSJ] (3.0 cr)
- AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
- AAS 4232 - American Drama by Writers of Color (3.0 cr)
- or ENGL 4232 - American Drama by Writers of Color [DSJ] (3.0 cr)
- AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
- or ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
Twin Cities Campus
Asian and Middle Eastern Studies B.A.
Asian and Middle Eastern Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 to 55
- Degree: Bachelor of Arts

The Asian and Middle Eastern regions play integral roles in global culture, trade and commerce, and geopolitics. This major provides students with comprehensive approaches to understanding the cultures, histories, politics, and societies of these diverse regions. This interdisciplinary approach to the study of Asia and the Middle East is combined with rigorous language study to produce advanced proficiency in one of the following languages: Arabic, Chinese, Hindi, Hmong, Japanese, Korean, or Urdu. Students’ chosen language of study will determine their subplan.

Study abroad is encouraged and can contribute credit to the major.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Complete the introductory 4-semester sequence (or its equivalent) of Arabic, Chinese, Hindi, Hmong, Japanese, Korean or Urdu. Placement testing is required for students who wish to begin with the second semester or higher language courses and have no previous University courses. Study abroad or transfer courses may be approved by the Directors of Language Instruction.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of Arabic, or Chinese, or Hindi, or Hmong, or Japanese, or Korean, or Urdu.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Asian and Middle Eastern Studies BA is AMES.

Students with advanced or native language ability may substitute AMES 3xxx-5xxx literature/culture courses in lieu of the major language requirement; see departmental advisor for final consent.

At least 18 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BA or a minor in Asian and Middle Eastern Studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Reading Asian Cultures
AMES 3001 is only offered in the Fall.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- AMES 3001 - Reading Asian Cultures (3.0 cr)

AMES and AMES-related Courses
Majors take at least 7 courses from Groups A, B and C. At least 4 of the 7 courses must be from Group A. Courses from Group B and
C are optional. No more than 1 course may be from Group C.
Take 7 or more course(s) totaling 19 or more credit(s) from the following:

### Upper-Division Courses
At least 6 of the 7 courses from Groups A, B and C must be upper-division courses worth at least 3 credits.

Take 6 or more course(s) totaling 18 or more credit(s) from the following:

#### Group A: Upper Division AMES Courses
Transfer or study abroad courses may not count towards Group A.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMES 3223W</td>
<td>&quot;Short&quot; Poetry in China and Japan [WI]</td>
<td>3.0 cr</td>
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<tr>
<td>AMES 3265W</td>
<td>The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)</td>
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<tr>
<td>AMES 3336</td>
<td>Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)</td>
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<tr>
<td>AMES 3337</td>
<td>Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)</td>
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<tr>
<td>AMES 3351</td>
<td>Martial Arts in Chinese Literature and Film (3.0 cr)</td>
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<tr>
<td>AMES 3356W</td>
<td>Chinese Film [AH, WI] (3.0 cr)</td>
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<tr>
<td>AMES 3357</td>
<td>Taiwan Film (3.0 cr)</td>
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<tr>
<td>AMES 3361W</td>
<td>Maps, Pictures and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)</td>
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<tr>
<td>AMES 3362</td>
<td>Women Writers in Chinese History (3.0 cr)</td>
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<tr>
<td>AMES 3433</td>
<td>Traditional Japanese Literature In Translation [LITR] (3.0 cr)</td>
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<tr>
<td>AMES 3436</td>
<td>Postwar Japanese Literature in Translation (3.0 cr)</td>
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<tr>
<td>AMES 3437</td>
<td>The Japanese Novel [LITR, GP] (3.0 cr)</td>
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<tr>
<td>AMES 3441W</td>
<td>Japanese Theater [AH, WI] (3.0 cr)</td>
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<tr>
<td>AMES 3456</td>
<td>Japanese Film [GP] (3.0 cr)</td>
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<tr>
<td>AMES 3458</td>
<td>Japanese Animation [GP] (3.0 cr)</td>
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<tr>
<td>AMES 3466</td>
<td>Japanese Popular Culture in a Global Context (3.0 cr)</td>
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<tr>
<td>AMES 3467</td>
<td>Science Fiction, Empire, Japan (3.0 cr)</td>
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<tr>
<td>AMES 3468</td>
<td>Environment, Technology and Culture in Modern Japan [ENVI] (3.0 cr)</td>
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<tr>
<td>AMES 3536</td>
<td>Modern Korean Literature [LITR, GP] (3.0 cr)</td>
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<tr>
<td>AMES 3556</td>
<td>Korean Film [AH, GP] (3.0 cr)</td>
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<tr>
<td>AMES 3576</td>
<td>Language &amp; Society of the Two Koreas (3.0 cr)</td>
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<tr>
<td>AMES 3586</td>
<td>Cold War Cultures in Korea (3.0 cr)</td>
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<tr>
<td>AMES 3636</td>
<td>South Asian Women Writers (3.0 cr)</td>
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<tr>
<td>AMES 3672W</td>
<td>Modern Indian Literature [LITR, GP, WI] (3.0 cr)</td>
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<tr>
<td>AMES 3651</td>
<td>Ghosts of India [GP] (3.0 cr)</td>
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<tr>
<td>AMES 3673</td>
<td>Survey of India: Languages, Literature, and Film [GP] (3.0 cr)</td>
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<tr>
<td>AMES 3679</td>
<td>Religion and Society in Modern South Asia (3.0 cr)</td>
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<tr>
<td>AMES 3772</td>
<td>Hmong Language and Culture Immersion in China (4.0 cr)</td>
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<tr>
<td>AMES 3723</td>
<td>Hmong Language and Culture Immersion in Thailand [GP] (4.0 cr)</td>
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<tr>
<td>AMES 3820</td>
<td>Topics in Arab Culture (3.0 cr)</td>
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<tr>
<td>AMES 3832</td>
<td>The Politics of Arabic Poetry [LITR, GP] (3.0 cr)</td>
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<tr>
<td>AMES 3856W</td>
<td>Palestinian Literature and Film [GP, WI] (3.0 cr)</td>
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<tr>
<td>AMES 3867</td>
<td>Orientalism and the Arab World (3.0 cr)</td>
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<tr>
<td>AMES 3920</td>
<td>Topics in Asian Culture (3.0 cr)</td>
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<tr>
<td>AMES 5277</td>
<td>Space and Modernity in Asia (3.0 cr)</td>
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<tr>
<td>AMES 3351</td>
<td>Chinese New Media (3.0 cr)</td>
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<tr>
<td>AMES 3358</td>
<td>Realism, Revolution, and the Moving Image (3.0 cr)</td>
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<tr>
<td>AMES 3359</td>
<td>Early Shanghai Film Culture (3.0 cr)</td>
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<tr>
<td>AMES 5374</td>
<td>The Monkey King and Transcultural China: Chinese Myth, Legend, and Ideology (3.0 cr)</td>
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<tr>
<td>AMES 5436</td>
<td>Literature by 20th-Century Japanese Women in Translation (3.0 cr)</td>
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<tr>
<td>AMES 5446</td>
<td>Kabuki: A Pop, Queer, and Classical Theater in Japan (3.0 cr)</td>
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<td>AMES 5486</td>
<td>Images of “Japan” (3.0 cr)</td>
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<tr>
<td>AMES 5866</td>
<td>Gender and Sexuality in Modern Arabic Literature (3.0 cr)</td>
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<tr>
<td>AMES 5920</td>
<td>Topics in Asian Culture (3.0 cr)</td>
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<tr>
<td>HIST 3476</td>
<td>War and Peace in Japan Through Popular Culture (4.0 cr)</td>
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<tr>
<td>AMES 3014W</td>
<td>Art of India [AH, GP, WI] (4.0 cr)</td>
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<tr>
<td>or ARTH 3014W</td>
<td>Art of India [AH, GP, WI] (4.0 cr)</td>
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<tr>
<td>or RELS 3415W</td>
<td>Art of India [AH, GP, WI] (4.0 cr)</td>
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<tr>
<td>AMES 3372</td>
<td>History of Women and Family in China, 1600-2000 (3.0 cr)</td>
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<tr>
<td>or HIST 3469</td>
<td>History of Women and Family in China, 1600-2000 (3.0 cr)</td>
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<tr>
<td>AMES 3373</td>
<td>Religion and Society in Imperial China [HIS] (3.0 cr)</td>
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<tr>
<td>or HIST 3466</td>
<td>Religion and Society in Imperial China [HIS] (3.0 cr)</td>
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<tr>
<td>or RELS 3373</td>
<td>Religion and Society in Imperial China [HIS] (3.0 cr)</td>
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<tr>
<td>AMES 3377</td>
<td>A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)</td>
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<tr>
<td>or RELS 3377</td>
<td>A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)</td>
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<tr>
<td>AMES 3478</td>
<td>Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)</td>
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<tr>
<td>or EAS 3471</td>
<td>Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)</td>
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</tbody>
</table>
• HIST 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
• AMES 3672 - Buddhism [GP] (3.0 cr)
• RELS 3371 - Buddhism [GP] (3.0 cr)
• AMES 3771 - History of Southeast Asia [GP] (3.0 cr)
or HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
or HIST 3776 - Hmong History Across the Globe (3.0 cr)
or AAS 3483 - Hmong History Across the Globe (3.0 cr)
or HIST 3483 - Hmong History Across the Globe (3.0 cr)
• AMES 3866 - Arab American Experiences (3.0 cr)
or AAS 3866 - Arab American Experiences (3.0 cr)
• AMES 3871 - Islam: Religion and Culture (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
• AMES 3872 - The Cultures of the Silk Road (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
• CHN 5211 - Introductory Classical Chinese I (3.0 cr)
or JPN 5211 - Introductory Classical Chinese I (3.0 cr)
or KOR 5211 - Introductory Classical Chinese I (3.0 cr)
• CHN 5212 - Introductory Classical Chinese II (3.0 cr)
or JPN 5212 - Introductory Classical Chinese II (3.0 cr)
or KOR 5212 - Introductory Classical Chinese II (3.0 cr)
• EAS 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 5479 - History of Chinese Cities and Urban Life (3.0 cr)
• Group B: Other Upper Division Courses
Transfer or study abroad courses that are at least 3 credits may count towards Group B.
Take 0 - 3 course(s) from the following:
• ARAB 3811 - Egyptian Colloquial Arabic I (3.0 cr)
• ARAB 3812 - Egyptian Colloquial Arabic II (3.0 cr)
• ARAB 3900 - Topics in Arabic (3.0 cr)
• ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• CHN 5213 - Literary Chinese in the Analects (3.0 cr)
or CHN 5214 - Classical Chinese Language and Culture (3.0 cr)
or GEOG 3211 - East Asia (3.0 cr)
• GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
or HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
or HIST 3487 - The Vietnam Wars: French Colonialism and U.S. Intervention in Indochina (3.0 cr)
• HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
or HIST 3507 - History of Modern Egypt (3.0 cr)
or HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
or HIST 3514 - Environmental History of the Middle East and North Africa (3.0 cr)
or HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or LANT 3501 - Introduction to Korean Civilization (3.0 cr)
or LANT 3502 - Introduction to Korean History (3.0 cr)
or LANT 3503 - Traditional Korean Poetry: Sijo (3.0 cr)
or POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
or AAS 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
or HIST 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
or AMES 3671 - Hinduism (3.0 cr)
or HIST 3492 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
or CNES 3374 - Exploring the Qur'an: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
or RELS 3704 - Exploring the Qur'an: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
or EAS 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or EAS 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or EAS 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
• GLOS 3645 - Islamic World [SOCSS, GP] (3.0 cr)
  or
• GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
  or
• HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
  or
• RELS 3714 - Islam and the West (3.0 cr)
• GLOS 3969 - 20th Century India (3.0 cr)
  or
• HIST 3489 - 20th Century India (3.0 cr)
• HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
  or
• RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
  or
• RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• Advanced and Readings language courses may only count towards Group B if they are not already counting towards a student's sub-plan.
  Take 0 or more course(s) from the following:
  • ARAB 5040 - Readings in Arabic Texts (3.0 cr)
  • CHN 4041 - Advanced Readings in Modern Chinese I (4.0 cr)
  • CHN 4042 - Advanced Readings in Modern Chinese II (4.0 cr)
  • CHN 5040 - Readings in Chinese Texts (3.0 cr)
  • CHN 5041 - Media Chinese (3.0 cr)
  • CHN 5042 - Contemporary Chinese Texts 1949-present (3.0 cr)
  • CHN 5213 - Literary Chinese in the Analects (3.0 cr)
  • HMNG 5040 - Readings in Hmong Texts (2.0 - 4.0 cr)
  • JPN 4041 - Advanced Japanese Conversation and Composition I (4.0 cr)
  • JPN 4042 - Advanced Japanese Conversation and Composition II (4.0 cr)
  • JPN 5040 - Readings in Japanese Texts (3.0 cr)
  • KOR 4041 - Advanced Readings in Modern Korean I (4.0 cr)
  • KOR 4042 - Advanced Readings in Modern Korean II (4.0 cr)
  • KOR 5140 - Readings in Sino-Korean Texts (3.0 cr)
• Intermediate language courses may only count towards Group B if they are different from the student's sub-plan language.
  Take 0 or more course(s) from the following:
  • ARAB 3101 - Intermediate Arabic I (5.0 cr)
  • ARAB 3102 - Intermediate Arabic II (5.0 cr)
  • CHN 3016 - Accelerated Intermediate Modern Chinese (5.0 cr)
  • CHN 3021 - Intermediate Modern Chinese I (5.0 cr)
  • CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
  • CHN 3031 - Advanced Modern Chinese I (4.0 cr)
  • CHN 3032 - Advanced Modern Chinese II (4.0 cr)
  • HMNG 3016 - Accelerated Intermediate Hmong (5.0 cr)
  • HMNG 3021 - Intermediate Hmong I (5.0 cr)
  • HMNG 3022 - Intermediate Hmong II (5.0 cr)
  • HMNG 3031 - Advanced Hmong I (4.0 cr)
  • HMNG 3032 - Advanced Hmong II (4.0 cr)
  • HNDI 3016 - Accelerated Intermediate Hindi (5.0 cr)
  • HNDI 3021 - Intermediate Hindi I (5.0 cr)
  • HNDI 3022 - Intermediate Hindi II (5.0 cr)
  • HNDI 3031 - Advanced Hindi I (4.0 cr)
  • HNDI 3032 - Advanced Hindi II (4.0 cr)
  • JPN 3021 - Intermediate Japanese I (5.0 cr)
  • JPN 3022 - Intermediate Japanese II (5.0 cr)
  • JPN 3031 - Third Year Japanese I (4.0 cr)
  • JPN 3032 - Third Year Japanese II (4.0 cr)
  • KOR 3021 - Intermediate Korean I (5.0 cr)
  • KOR 3022 - Intermediate Korean II (5.0 cr)
  • KOR 3031 - Third Year Korean I (4.0 cr)
  • KOR 3032 - Third Year Korean II (4.0 cr)
  • URDU 3016 - Accelerated Intermediate Urdu (5.0 cr)
  • URDU 3021 - Intermediate Urdu I (5.0 cr)
  • URDU 3022 - Intermediate Urdu II (5.0 cr)
  • URDU 3031 - Advanced Urdu I (4.0 cr)
  • URDU 3032 - Advanced Urdu II (4.0 cr)
• Group C: Other Electives
  Transfer or study abroad courses that are at least 2 credits may count towards Group C.
  Take 0 - 1 course(s) from the following:
  • ALL 19xx - Freshman Seminar
• ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
• CHN 3201 - Chinese Calligraphy (2.0 cr)
• CHN 3202 - Intermediate Chinese Calligraphy (2.0 cr)
• CHN 3203 - Advanced Chinese Handwriting (2.0 cr)

Up to one 1xxx-level language course may count towards Group C, only if it is different from a student's sub-plan language.

Take 0 - 1 course(s) from the following:
• ARAB 1101 - Beginning Arabic I (5.0 cr)
• ARAB 1102 - Beginning Arabic II (5.0 cr)
• CHN 1011 - Beginning Modern Chinese I (5.0 cr)
• CHN 1012 - Beginning Modern Chinese II (5.0 cr)
• CHN 1015 - Accelerated Beginning Modern Chinese (5.0 cr)
• CHN 1011 - Beginning Hmong I (5.0 cr)
• CHN 1012 - Beginning Hmong II (5.0 cr)
• CHN 1015 - Accelerated Beginning Hmong (5.0 cr)
• HNDI 1011 - Beginning Hindi I (5.0 cr)
• HNDI 1012 - Beginning Hindi II (5.0 cr)
• HNDI 1015 - Accelerated Beginning Hindi (5.0 cr)
• JPN 1011 - Beginning Japanese I (5.0 cr)
• JPN 1012 - Beginning Japanese II (5.0 cr)
• KOR 1011 - Beginning Korean I (5.0 cr)
• KOR 1012 - Beginning Korean II (5.0 cr)
• URDU 1011 - Beginning Urdu I (5.0 cr)
• URDU 1012 - Beginning Urdu II (5.0 cr)
• URDU 1015 - Accelerated Beginning Urdu (5.0 cr)

Capstone
The capstone project in the department of Asian and Middle Eastern Studies is meant to demonstrate the cumulative language and critical thinking and analysis skills developed by students over the course of their undergraduate studies. It consists of a thesis at least 6000 words long, in which students must synthesize research in primary language sources (i.e. texts, films, or other forms of cultural production in the original language of students declared subplan) with secondary research.

Students who double major and choose to complete the capstone requirement in their other major may waive Asian and Middle Eastern Studies capstone, but are still responsible for taking the 35 credits required for the Asian and Middle Eastern Studies BA. AMES 4901W is only offered in the Spring.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• AMES 4901W - Capstone Project in Asian Languages & Literatures [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• AMES 3232W - "Short" Poetry in China and Japan [WI] (3.0 cr)
• AMES 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
• AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
• AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• AMES 3441W - Japanese Theater [AH, WI] (3.0 cr)
• AMES 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
• AMES 3856W - Palestinian Literature and Film [GP, WI] (3.0 cr)
• AMES 4901W - Capstone Project in Asian Languages & Literatures [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Arabic

Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• ARAB 1101 - Beginning Arabic I (5.0 cr)
• ARAB 1102 - Beginning Arabic II (5.0 cr)
• ARAB 3101 - Intermediate Arabic I (5.0 cr)
• ARAB 3102 - Intermediate Arabic II (5.0 cr)

Advanced Language Courses
Take 2 or more course(s) totaling 7 or more credit(s) from the following:
• ARAB 5040 - Readings in Arabic Texts (3.0 cr)
• ARAB 5101 - Advanced Arabic I (4.0 cr)
• ARAB 5102 - Advanced Arabic II (4.0 cr)

Chinese
Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 22 credit(s) from the following:
CHN 1011 - Beginning Modern Chinese I (5.0 cr)
CHN 1012 - Beginning Modern Chinese II (5.0 cr)
or CHN 1015 - Accelerated Beginning Modern Chinese (5.0 cr)
CHN 3021 - Intermediate Modern Chinese I (5.0 cr)
CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
or CHN 3016 - Accelerated Intermediate Modern Chinese (5.0 cr)

Advanced Language Courses
Take exactly 2 course(s) totaling 7 or more credit(s) from the following:
• CHN 3031 - Advanced Modern Chinese I (4.0 cr)
• CHN 3032 - Advanced Modern Chinese II (4.0 cr)
• CHN 4041 - Advanced Readings in Modern Chinese I (4.0 cr)
• CHN 4042 - Advanced Readings in Modern Chinese II (4.0 cr)
• CHN 5040 - Readings in Chinese Texts (3.0 cr)
• CHN 5041 - Media Chinese (3.0 cr)
• CHN 5042 - Contemporary Chinese Texts 1949-present (3.0 cr)

Hindi
Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
HNDI 1011 - Beginning Hindi I (5.0 cr)
HNDI 1012 - Beginning Hindi II (5.0 cr)
or HNDI 1015 - Accelerated Beginning Hindi (5.0 cr)
HNDI 3021 - Intermediate Hindi I (5.0 cr)
HNDI 3022 - Intermediate Hindi II (5.0 cr)
or HNDI 3016 - Accelerated Intermediate Hindi (5.0 cr)

Advanced Language Courses
Take 2 or more course(s) totaling 7 or more credit(s) from the following:
• HNDI 3031 - Advanced Hindi I (4.0 cr)
• HNDI 3032 - Advanced Hindi II (4.0 cr)

Hmong
Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
HMNG 1011 - Beginning Hmong I (5.0 cr)
HMNG 1012 - Beginning Hmong II (5.0 cr)
HMNG 3021 - Intermediate Hmong I (5.0 cr)
HMNG 3022 - Intermediate Hmong II (5.0 cr)
or HMNG 1015 - Accelerated Beginning Hmong (5.0 cr)
HMNG 3016 - Accelerated Intermediate Hmong (5.0 cr)

Advanced Language Courses
Take 2 or more course(s) totaling 7 or more credit(s) from the following:
• HMNG 3031 - Advanced Hmong I (4.0 cr)
• HMNG 3032 - Advanced Hmong II (4.0 cr)
• HMNG 5040 - Readings in Hmong Texts (2.0 - 4.0 cr)

Japanese
Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• JPN 1011 - Beginning Japanese I (5.0 cr)
• JPN 1012 - Beginning Japanese II (5.0 cr)
• JPN 3021 - Intermediate Japanese I (5.0 cr)
• JPN 3022 - Intermediate Japanese II (5.0 cr)

Advanced Language Courses
Take 2 or more course(s) totaling 7 or more credit(s) from the following:
• JPN 3031 - Third Year Japanese I (4.0 cr)
• JPN 3032 - Third Year Japanese II (4.0 cr)
• JPN 4041 - Advanced Japanese Conversation and Composition I (4.0 cr)
• JPN 4042 - Advanced Japanese Conversation and Composition II (4.0 cr)
• JPN 5040 - Readings in Japanese Texts (3.0 cr)
Korean

Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• KOR 1011 - Beginning Korean I (5.0 cr)
• KOR 1012 - Beginning Korean II (5.0 cr)
• KOR 3021 - Intermediate Korean I (5.0 cr)
• KOR 3022 - Intermediate Korean II (5.0 cr)

Advanced Language Courses
Take 2 or more course(s) totaling 7 or more credit(s) from the following:
• KOR 3031 - Third Year Korean I (4.0 cr)
• KOR 3032 - Third Year Korean II (4.0 cr)
• KOR 4041 - Advanced Readings in Modern Korean I (4.0 cr)
• KOR 4042 - Advanced Readings in Modern Korean II (4.0 cr)
• KOR 5140 - Readings in Sino-Korean Texts (3.0 cr)

Urdu

Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• URDU 1011 - Beginning Urdu I (5.0 cr)
• URDU 1012 - Beginning Urdu II (5.0 cr)
• URDU 1015 - Accelerated Beginning Urdu (5.0 cr)
• URDU 3021 - Intermediate Urdu I (5.0 cr)
• URDU 3022 - Intermediate Urdu II (5.0 cr)
• URDU 3016 - Accelerated Intermediate Urdu (5.0 cr)

Advanced Language Courses
Take 2 or more course(s) totaling 7 or more credit(s) from the following:
• URDU 3031 - Advanced Urdu I (4.0 cr)
• URDU 3032 - Advanced Urdu II (4.0 cr)
Twin Cities Campus
Asian and Middle Eastern Studies Minor
Asian and Middle Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 30

The Asian and Middle Eastern regions play integral roles in global culture, trade and commerce, and geopolitics. The minor in Asian and Middle Eastern Studies provides students with an overview of the cultural, social, historical, and political dynamics that have and continue to shape these regions, and the role that they play globally.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students are required to complete 2 semester(s) of Arabic, or Chinese, or Hindi, or Hmong, or Japanese, or Korean, or Urdu with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

The AMES minor requires five courses. Three courses are required from Groups A and B. At least 2 courses must be from Group A. Courses from Group B are optional.

Students must elect a sub-plan based on their language of concentration. Two of the five courses must be at the intermediate level or higher in Arabic, Chinese, Hindi, Hmong, Japanese, Korean, or Urdu. The name of the sub-plan is the same as the chosen language. The language courses must be in the same language and taken at the University of Minnesota - Twin Cities.

Students with advanced or native language ability may substitute AMES 3xxx-5xxx literature/culture courses in lieu of the minor language requirement; see departmental advisor for final consent. Students who do qualify to substitute the minor language requirement may obtain the minor with 15 credits.

Students may earn a BA or a minor in Asian and Middle Eastern Studies, but not both.

Minor Courses
Minors take at least 3 courses from Groups A and B. At least 2 of the 3 courses must be from Group A. Courses from Group B are optional.

Take 3 or more course(s) totaling 9 - 13 credit(s) from the following:

Group A. Upper Division AMES Courses
Transfer or study abroad credit may NOT be used towards Group A.

Take 2 - 3 course(s) totaling 6 - 12 credit(s) from the following:

• AMES 3001 - Reading Asian Cultures (3.0 cr)
• AMES 3232W - “Short” Poetry in China and Japan [WI] (3.0 cr)
• AMES 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
• AMES 3336 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)
• AMES 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
• AMES 3351 - Martial Arts in Chinese Literature and Film (3.0 cr)
• AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
• AMES 3357 - Taiwan Film (3.0 cr)
• AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• AMES 3362 - Women Writers in Chinese History (3.0 cr)
• AMES 3433 - Traditional Japanese Literature in Translation [LITR] (3.0 cr)
• AMES 3436 - Postwar Japanese Literature in Translation (3.0 cr)
• AMES 3437 - The Japanese Novel [LITR, GP] (3.0 cr)
• AMES 3441W - Japanese Theater [AH, WI] (3.0 cr)
• AMES 3456 - Japanese Film [GP] (3.0 cr)
• AMES 3458 - Japanese Animation [GP] (3.0 cr)
• AMES 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
• AMES 3467 - Science Fiction, Empire, Japan (3.0 cr)
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<td>Korean Film [AH, GP]</td>
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<td>AMES 3673</td>
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<td>The Monkey King and Transcultural China: Chinese Myth, Legend, and Ideology</td>
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or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 5479 - History of Chinese Cities and Urban Life (3.0 cr)

•Group B: Other Upper Division Courses

3-credit transfer or study abroad courses may count towards Group B. See departmental adviser or DUS for final approval.
Take 0 - 1 course(s) totaling 0 - 5 credit(s) from the following:

• ARAB 3811 - Egyptian Colloquial Arabic I (3.0 cr)
• ARAB 3812 - Egyptian Colloquial Arabic II (3.0 cr)
• ARAB 3900 - Topics in Arabic (3.0 cr)
• ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• CHN 5213 - Literary Chinese in the Analects (3.0 cr)
• CHN 5214 - Classical Chinese Language and Culture (3.0 cr)
• GEOG 3211 - East Asia (3.0 cr)
• GWS 3404 - Transnational Sexualities [GP] (3.0 cr)
• HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
• HIST 3487 - The Vietnam Wars: French Colonialism and U.S. Intervention in Indochina (3.0 cr)
• HIST 3507 - History of Modern Egypt (3.0 cr)
• HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
• HIST 3514 - Environmental History of the Middle East and North Africa (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
• LANG 3501 - Introduction to Korean Civilization (3.0 cr)
• LANG 3502 - Introduction to Korean History (3.0 cr)
• LANG 3503 - Traditional Korean Poetry: Sijo (3.0 cr)
• POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
• AAS 3466 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
or HIST 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
or AMES 3671 - Hinduism (3.0 cr)
or HIST 3492 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• CNES 3074 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
or RELS 3704 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
• EAS 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
• EAS 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or RELS 3462I - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462 - From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
• GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
• GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 5478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• GLOS 3463 - Islam and the West (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
• GLOS 3969 - 20th Century India (3.0 cr)
or HIST 3489 - 20th Century India (3.0 cr)
• HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• Upper-division language courses can only count towards Group B if they are not already counting towards a student's sub-plan.
Take 0 or more course(s) from the following:

• ARAB 3101 - Intermediate Arabic I (5.0 cr)
• ARAB 3102 - Intermediate Arabic II (5.0 cr)
• ARAB 3040 - Readings in Arabic Texts (3.0 cr)
• ARAB 5101 - Advanced Arabic I (4.0 cr)
• ARAB 5102 - Advanced Arabic II (4.0 cr)
• CHN 3016 - Accelerated Intermediate Modern Chinese (5.0 cr)
• CHN 3021 - Intermediate Modern Chinese I (5.0 cr)
• CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
• CHN 3031 - Advanced Modern Chinese I (4.0 cr)
• CHN 3032 - Advanced Modern Chinese II (4.0 cr)
• CHN 4041 - Advanced Readings in Modern Chinese I (4.0 cr)
• CHN 4042 - Advanced Readings in Modern Chinese II (4.0 cr)
• CHN 5040 - Readings in Chinese Texts (3.0 cr)
• CHN 5041 - Media Chinese (3.0 cr)
• CHN 5042 - Contemporary Chinese Texts 1949-present (3.0 cr)
• CHN 5213 - Literary Chinese in the Analects (3.0 cr)
• HMNG 3016 - Accelerated Intermediate Hmong (5.0 cr)
• HMNG 3021 - Intermediate Hmong I (5.0 cr)
• HMNG 3022 - Intermediate Hmong II (5.0 cr)
• HMNG 3031 - Advanced Hmong I (4.0 cr)
• HMNG 3032 - Advanced Hmong II (4.0 cr)
• HMNG 5040 - Readings in Hmong Texts (2.0 - 4.0 cr)
• HNDI 3016 - Accelerated Intermediate Hindi (5.0 cr)
• HNDI 3021 - Intermediate Hindi I (5.0 cr)
• HNDI 3022 - Intermediate Hindi II (5.0 cr)
• HNDI 3031 - Advanced Hindi I (4.0 cr)
• HNDI 3032 - Advanced Hindi II (4.0 cr)
• JPN 3021 - Intermediate Japanese I (5.0 cr)
• JPN 3022 - Intermediate Japanese II (5.0 cr)
• JPN 3031 - Third Year Japanese I (4.0 cr)
• JPN 3032 - Third Year Japanese II (4.0 cr)
• JPN 4041 - Advanced Japanese Conversation and Composition I (4.0 cr)
• JPN 4042 - Advanced Japanese Conversation and Composition II (4.0 cr)
• JPN 5040 - Readings in Japanese Texts (3.0 cr)
• KOR 3021 - Intermediate Korean I (5.0 cr)
• KOR 3022 - Intermediate Korean II (5.0 cr)
• KOR 3031 - Third Year Korean I (4.0 cr)
• KOR 3032 - Third Year Korean II (4.0 cr)
• KOR 4041 - Advanced Readings in Modern Korean I (4.0 cr)
• KOR 5140 - Readings in Sino-Korean Texts (3.0 cr)
• URDU 3016 - Accelerated Intermediate Urdu (5.0 cr)
• URDU 3021 - Intermediate Urdu I (5.0 cr)
• URDU 3022 - Intermediate Urdu II (5.0 cr)
• URDU 3031 - Advanced Urdu I (4.0 cr)
• URDU 3032 - Advanced Urdu II (4.0 cr)

**Program Sub-plans**

Students are required to complete one of the following sub-plans.

**Arabic**

**Prerequisite Courses**

Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:

• ARAB 1101 - Beginning Arabic I (5.0 cr)
• ARAB 1102 - Beginning Arabic II (5.0 cr)

**Intermediate and Advanced Language Courses**

These courses must be taken in residence at the University of Minnesota - Twin Cities campus.

Take exactly 2 course(s) totaling 7 or more credit(s) from the following:

• ARAB 3101 - Intermediate Arabic I (5.0 cr)
• ARAB 3102 - Intermediate Arabic II (5.0 cr)
• ARAB 5040 - Readings in Arabic Texts (3.0 cr)
• ARAB 5101 - Advanced Arabic I (4.0 cr)
• ARAB 5102 - Advanced Arabic II (4.0 cr)

**Chinese**

**Prerequisite Courses**

Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:

• CHN 1011 - Beginning Modern Chinese I (5.0 cr)
• CHN 1012 - Beginning Modern Chinese II (5.0 cr)

or

• CHN 1015 - Accelerated Beginning Modern Chinese (5.0 cr)

**Intermediate and Advanced Language Courses**

These courses must be taken in residence at the University of Minnesota - Twin Cities campus.

Take exactly 2 course(s) totaling 7 or more credit(s) from the following:

• CHN 3016 - Accelerated Intermediate Modern Chinese (5.0 cr)
• CHN 3021 - Intermediate Modern Chinese I (5.0 cr)
Chinese

Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
- CHN 3031 - Advanced Modern Chinese I (4.0 cr)
- CHN 3032 - Advanced Modern Chinese II (4.0 cr)
- CHN 4041 - Advanced Readings in Modern Chinese I (4.0 cr)
- CHN 4042 - Advanced Readings in Modern Chinese II (4.0 cr)
- CHN 5040 - Readings in Chinese Texts (3.0 cr)

Intermediate and Advanced Language Courses
These courses must be taken in residence at the University of Minnesota - Twin Cities campus.
Take exactly 2 course(s) totaling 8 or more credit(s) from the following:
- CHN 3016 - Accelerated Intermediate Chinese (5.0 cr)
- CHN 3021 - Intermediate Chinese I (5.0 cr)
- CHN 3022 - Intermediate Chinese II (5.0 cr)
- CHN 3031 - Advanced Chinese I (4.0 cr)
- CHN 3032 - Advanced Chinese II (4.0 cr)
- CHN 5040 - Readings in Chinese Texts (3.0 cr)

Hindi

Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- HNDI 1011 - Beginning Hindi I (5.0 cr)
- HNDI 1012 - Beginning Hindi II (5.0 cr)
- HNDI 1015 - Accelerated Beginning Hindi (5.0 cr)

Intermediate and Advanced Language Courses
These courses must be taken in residence at the University of Minnesota - Twin Cities campus.
Take exactly 2 course(s) totaling 8 or more credit(s) from the following:
- HNDI 3016 - Accelerated Intermediate Hindi (5.0 cr)
- HNDI 3021 - Intermediate Hindi I (5.0 cr)
- HNDI 3022 - Intermediate Hindi II (5.0 cr)
- HNDI 3031 - Advanced Hindi I (4.0 cr)
- HNDI 3032 - Advanced Hindi II (4.0 cr)

Hmong

Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- HMNG 1011 - Beginning Hmong I (5.0 cr)
- HMNG 1012 - Beginning Hmong II (5.0 cr)
- HMNG 1015 - Accelerated Beginning Hmong (5.0 cr)

Intermediate and Advanced Language Courses
These courses must be taken in residence at the University of Minnesota - Twin Cities campus.
Take 2 or more course(s) totaling 8 or more credit(s) from the following:
- HMNG 3016 - Accelerated Intermediate Hmong (5.0 cr)
- HMNG 3021 - Intermediate Hmong I (5.0 cr)
- HMNG 3022 - Intermediate Hmong II (5.0 cr)
- HMNG 3031 - Advanced Hmong I (4.0 cr)
- HMNG 3032 - Advanced Hmong II (4.0 cr)
- HMNG 5040 - Readings in Hmong Texts (2.0 - 4.0 cr)

Japanese

Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- JPN 1011 - Beginning Japanese I (5.0 cr)
- JPN 1012 - Beginning Japanese II (5.0 cr)

Intermediate and Advanced Language Courses
These courses must be taken in residence at the University of Minnesota - Twin Cities campus.
Take exactly 2 course(s) totaling 7 or more credit(s) from the following:
- JPN 3021 - Intermediate Japanese I (5.0 cr)
- JPN 3022 - Intermediate Japanese II (5.0 cr)
- JPN 3031 - Third Year Japanese I (4.0 cr)
- JPN 3032 - Third Year Japanese II (4.0 cr)
- JPN 4041 - Advanced Japanese Conversation and Composition I (4.0 cr)
- JPN 4042 - Advanced Japanese Conversation and Composition II (4.0 cr)
- JPN 5040 - Readings in Japanese Texts (3.0 cr)

Korean

Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- KOR 1011 - Beginning Korean I (5.0 cr)
- KOR 1012 - Beginning Korean II (5.0 cr)

Intermediate and Advanced Language Courses
These courses must be taken in residence at the University of Minnesota - Twin Cities campus.
Take exactly 2 course(s) totaling 7 or more credit(s) from the following:
- KOR 3021 - Intermediate Korean I (5.0 cr)
- KOR 3022 - Intermediate Korean II (5.0 cr)
- KOR 3031 - Third Year Korean I (4.0 cr)
• KOR 3032 - Third Year Korean II (4.0 cr)
• KOR 4041 - Advanced Readings in Modern Korean I (4.0 cr)
• KOR 4042 - Advanced Readings in Modern Korean II (4.0 cr)
• KOR 5140 - Readings in Sino-Korean Texts (3.0 cr)

Urdu

Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
  • URDU 1011 - Beginning Urdu I (5.0 cr)
  • URDU 1012 - Beginning Urdu II (5.0 cr)
  or URDU 1015 - Accelerated Beginning Urdu (5.0 cr)

Intermediate and Advanced Language Courses
These courses must be taken in residence at the University of Minnesota - Twin Cities campus.
Take exactly 2 course(s) totaling 8 or more credit(s) from the following:
  • URDU 3016 - Accelerated Intermediate Urdu (5.0 cr)
  • URDU 3021 - Intermediate Urdu I (5.0 cr)
  • URDU 3022 - Intermediate Urdu II (5.0 cr)
  • URDU 3031 - Advanced Urdu I (4.0 cr)
  • URDU 3032 - Advanced Urdu II (4.0 cr)
Twin Cities Campus
Astrophysics B.A.
Astrophysics, Minnesota Institute for
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 72 to 75
- Degree: Bachelor of Arts

The program in astrophysics develops the skills necessary to tackle complex and ill-defined problems within the physical sciences and prepares students for careers in several broad areas. The program is aimed primarily for students interested in secondary education in the physical sciences, science policy, and science and technical writing. The program can also prepare students for graduate study in astrophysics.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 7 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics Core
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
  Calculus I
  • MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  • Calculus II
  • MATH 1272 - Calculus II (4.0 cr)
  or MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)
  • Linear Algebra and Differential Equations
  • MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2574H - Honors Calculus IV (4.0 cr)

Physics Core
Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:
  Physics I
  • PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
  • Physics II
  • PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
  • Physics III
  • PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
  or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
  or PHYS 2503H - Honors Physics III (4.0 cr)
  • Thermodynamics
  • PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in
which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Astrophysics BA is AST.

AST 1011H is recommended but it does not count towards the Astrophysics BA.

At least 16 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn no more than one undergraduate degree from the Astrophysics program: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 9 course(s) totaling exactly 34 credit(s) from the following:

Astrophysics
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
- AST 2001 - Introduction to Astrophysics (4.0 cr)
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)

Physics
Take exactly 5 course(s) totaling exactly 18 credit(s) from the following:
- PHYS 2601 - Quantum Physics (4.0 cr)
- PHYS 3041 - Mathematical Methods for Physicists (3.0 cr)
- PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)
- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (4.0 cr)

Multivariable Calculus
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 2263 - Multivariable Calculus (4.0 cr)
  or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
  or MATH 2573H - Honors Calculus III (4.0 cr)

Technical Electives
Any AST 4xxx, 5xxx, or its cross-list that is not counting towards a different major requirement may count as a technical elective. When choosing technical electives, students work with the departmental advisor to choose an area of emphasis. The available areas of emphasis are professional, computational, industry, and secondary education. Other technical electives may be approved by the departmental advisor.

Take 8 or more credit(s) from the following:
- AST 5012 - The Interstellar Medium (4.0 cr)
- AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
- PHYS 4101 - Quantum Mechanics (4.0 cr)
- PHYS 4303 - Electrodynamics and Waves (3.0 cr)
- PHYS 4611 - Introduction to Nuclear and Particle Physics (3.0 cr)
- PHYS 4612 - Introduction to Space Physics (3.0 cr)
- PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
- AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
  or AST 5031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
- AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  or PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
  or PHYS 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
- Directed Studies
  Take no more than 1 course(s) from the following:
  - AST 4990 - Directed Studies (1.0 - 5.0 cr)
  - AST 4299H - Senior Honors Astrophysics Research Seminar (1.0 cr)

Capstone
This requirement can be met with directed research in astrophysics or a project tailored to the specific area of interest.
astrophysics capstone is carried out under the supervision of faculty member. The student is responsible for identifying and contacting the advisor. The topics, scope of the project, as well as the specifics of the final write-up are to be decided in close consultation with the faculty advisor.

Take exactly 1 course(s) totaling 2 - 4 credit(s) from the following:

Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the Astrophysics BA capstone.

- **AST 4994W - Directed Research [WI]** (2.0 - 5.0 cr)

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- **AST 4994W - Directed Research [WI]** (2.0 - 5.0 cr)
- **PHYS 3605W - Modern Physics Laboratory [WI]** (3.0 cr)
Twin Cities Campus
Astrophysics Minor
Astrophysics, Minnesota Institute for
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 27 to 29

Students in the minor learn the physical principles underlying study of the solar system, stars, galaxy, and universe, as well as the methodology behind observations and conclusions.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may complete no more than one degree in the Astrophysics program: a BA or a BS or a minor.

Mathematics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

- Calculus I
  - MATH 1271 - Calculus I [MATH] (4.0 cr)
  - or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  - or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

- Calculus II
  - MATH 1272 - Calculus II (4.0 cr)
  - or MATH 1372 - CSE Calculus II (4.0 cr)
  - or MATH 1572H - Honors Calculus II (4.0 cr)

Physics
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:

- Physics I
  - PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  - or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

- Physics II
  - PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  - or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

- Physics III
  - PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
  - or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
  - or PHYS 2503H - Honors Physics III (4.0 cr)

Introduction to Astrophysics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

- AST 2001 - Introduction to Astrophysics (4.0 cr)

Technical Elective
Any AST 4xxx, 5xxx, or its cross-list may count as a technical elective.
Take exactly 1 course(s) totaling 3 - 5 credit(s) from the following:

- AEM 4301 - Orbital Mechanics (3.0 cr)
- AEM 4501 - Aerospace Structures (3.0 cr)
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)
- AST 5012 - The Interstellar Medium (4.0 cr)
- AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
- EE 3601 - Transmission Lines, Fields, and Waves (3.0 cr)
- ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• ME 3324 - Introduction to Thermal Science (3.0 cr)
• PHYS 3022 - Introduction to Cosmology (3.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
  or AST 5031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
• AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  or PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
• AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
  or PHYS 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
Twin Cities Campus
Austrian and Central European Studies Minor
German, Nordic, Slavic & Dutch
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 36

The minor allows students to focus a group of electives on the study of Austrian and Central European culture, history, and society. Courses address specific social and political circumstances, cultural traditions, and shared history of Austria and other countries of Central Europe. The minor is supported by the Center for Austrian Studies, student exchange programs with universities in Vienna, Salzburg, and Graz, and visiting Austrian scholars sponsored by the Austrian-American Education Commission.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning and Intermediate German
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
  • GER 1001 - Beginning German (5.0 cr)
  • GER 1002 - Beginning German (5.0 cr)
  or GER 1022 - Beginning German Review (5.0 cr)
  • GER 1003 - Intermediate German (5.0 cr)
  • GER 1004 - Intermediate German (5.0 cr)

Minor Requirements
Students are required to take 4 semester(s) of German.

No more than one course counting towards the minor may be a directed study or independent research course. Any directed study or independent research course must be approved by the DUS.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota Twin Cities campus. In the Austrian and Central European Studies minor, this does not include learning abroad courses taken for resident credit.

Students with a German, Scandinavian, Dutch major may elect a minor in Austrian and Central European Studies (ACES), but no courses may count for both the major and the minor.

Core Courses
Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:
  • GER 3011W - Conversation and Composition [WI] (4.0 cr)
  • GER 3520 - Topics in Austrian and Central European Culture (3.0 cr)

Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
Art, Culture, and Literature
  • GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
  • GSD 3512W - Imagined Communities: German and European Culture and Controversies, 1700 to Present [WI] (3.0 cr)
  • CSCL 3412W - Psychoanalysis [WI] (3.0 cr)
  • Other course approved by the department's director of undergraduate studies
History, Politics, and Society
  • History, Politics, and Society
    Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• HIST 3746 - Game of Thrones: Emperors, Knights and Witches in Central Europe [HIS] (3.0 cr)
• HIST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)
  or JWST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)
• HSCI 3611 - Enlightenment, Revolution, and the Rise of Modern Science [HIS, GP] (3.0 cr)
  or HSCI 5611 - Enlightenment, Revolution, and the Rise of Modern Science (3.0 cr)
• Other course approved by the department's director of undergraduate studies
Twin Cities Campus
Bachelor of Individualized Studies B.I.S.
CLA Dean's Office
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 50
• Degree: Bachelor of Individualized Studies

The BIS provides flexibility in a student's degree program by allowing him or her to focus coursework on three areas, one of which may consist of courses outside CLA. The areas do not have to be related to each other, but the program proposal must explain how the areas of study connect to the student's overall educational goals.

Working closely with a BIS advisor, students develop a written proposal and course list. The proposal must be approved by a committee and three faculty or department advisors with expertise in the areas of concentration. Some departments and colleges have prerequisite or required courses for concentrations based in those departments and colleges in their BIS program.

For specific information on proposal procedures and on department and college guidelines, see the Individualized Degree Programs website: https://cla.umn.edu/academics-experience/majors-minors/individualized-degree-programs

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For certain concentrations, prerequisite courses must be completed before submitting a program proposal. For certain concentrations, a minimum overall GPA or a minimum tool course GPA is required before a student can submit a program proposal.

Students can declare the degree after attending an information session (held two to three times a week) and preparing a preliminary course list. Students are not approved for the degree until they have submitted a program proposal (the submission deadline is once per semester) and the proposal has been approved by a committee and faculty or department advisors.

See a BIS advisor for more information.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

Students must complete at least 50 approved credits at or above 3xxx, distributed among the three concentrations. The concentrations may be departmental or thematic in composition, and each must include at least 15 credits. Up to 21 credits in the program may be from outside CLA.

Students must have their program approved by a committee and three faculty or department advisors. At least 20 credits in the major must be completed after the program has been approved. No more than 12 credits of directed study may be applied toward the program.

Students are required to complete an analytic paper in one of their CLA areas of concentration.

All incoming CLA freshmen must complete the First-Year Experience course sequence.
Concentration Area Courses
Take 50 or more credit(s) from the following:

First Concentration Area
Take 15 or more credit(s) from the following:
• 3xxx or higher first concentration

Second Concentration Area
Take 15 or more credit(s) from the following:
• 3xxx or higher second concentration

Third Concentration Area
Take 15 or more credit(s) from the following:
• 3xxx or higher third concentration

Capstone
Students must complete a substantial capstone paper or project in one of their areas of concentration. This capstone will rely in some way on a culmination of knowledge or skill acquired through the BIS. Papers and projects may vary widely in form, depending on a student's program. The capstone will be identified and approved at the time of program approval. The majority of students will do the capstone course required in one of their areas of concentration.

Students who do a dual degree or double major and choose to complete the CLA capstone requirement in their other major are still required to take the B.I.S. capstone.

Capstone Paper
Write a 2,500-word paper in conjunction with a CLA course in the B.I.S. program.

or Capstone Project
Complete an artistic or service-learning project. Talk to the B.I.S. advisor for more information.

or Honors Thesis
Completion of an honors thesis will count for honors students completing a B.I.S.
Twin Cities Campus
Biblical Studies B.A.
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 35 to 49
• Degree: Bachelor of Arts

The biblical studies major is centered on the study of ancient Mediterranean religious thought and practice, extending from the second millennium BCE into Late Antiquity, encompassing the Hebrew Bible and its ancient Near Eastern contexts, Greco-Roman polytheism, and the classical contexts in which rabbinic Judaism and Christianity developed. The major is rooted in ancient texts; it concentrates on the Hebrew Bible, the New Testament, and related texts by studying them in the ancient languages and by situating them in their broad historical, intellectual, and religious contexts. This interdisciplinary program covers a diverse range of religious traditions, focusing on pivotal cultural encounters and interchanges in the ancient world. Students also have an exceptional opportunity to explore the vital relationships between past and present as they examine the ancient origins of modern religions. Students in this program gain a solid grounding in at least one relevant ancient language (Greek, Hebrew) and also study different methods of textual interpretation, both ancient and modern.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introductory Course
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• CNES 1082 - Jesus in History [HIS] (3.0 cr)
  or RELS 1082 - Jesus in History [HIS] (3.0 cr)
  or HIST 1082 - Jesus in History [HIS] (3.0 cr)
• CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)

Preparatory Greek or Hebrew
Take either the Greek or Hebrew 3-course language sequence for 14 credits. In select cases, students with advanced proficiency may be exempt from taking one or more of these courses. Placement is determined by the Hebrew and Greek Language Coordinators.
Take 0 - 3 course(s) totaling 0 - 14 credit(s) from the following:
Classical Greek
• GRK 1001 - Beginning Classical Greek I (5.0 cr)
• GRK 1002 - Beginning Classical Greek II (5.0 cr)
• GRK 3003 - Intermediate Greek Prose (4.0 cr)
Biblical Hebrew
• HEBR 1101 - Beginning Biblical Hebrew I (5.0 cr)
• HEBR 1102 - Beginning Biblical Hebrew II (5.0 cr)
• HEBR 3101 - Intermediate Biblical Hebrew I (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.
CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Biblical Studies BA is CNES.

A given course may only count towards one major requirement.

At least 18 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or minor in biblical studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

### Intermediate Language Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- GRK 3004 - Intermediate Greek Poetry (4.0 cr)
- or HEBR 3102 - Intermediate Biblical Hebrew II (4.0 cr)

### CNES Core Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- CNES 3601W - Sexuality and Gender in Ancient Greece and Rome [AH, WI] (3.0 cr)
- CNES 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
- CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
- CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
- CNES 5072 - The Birth of Christianity (3.0 cr)
- CNES 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
- CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
- CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
- or ANTH 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
- or HIST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
- or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
- or RELS 5535 - Death and the Afterlife in the Ancient World (3.0 cr)

### Electives
Take a minimum of 15 credits in at least two of the following three content areas: Hebrew Bible, New Testament and Early Christianity, and Early Judaism.

Take 15 or more credit(s) including 2 or more sub-requirements(s) from the following:

#### Hebrew Bible
Take 0 or more credit(s) from the following:
- AKKA 5011 - Elementary Akkadian I (3.0 cr)
- AKKA 5012 - Elementary Akkadian II (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 5713 - Introduction to Ugaritic (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• HEBR 5200 - Advanced Classical Hebrew (3.0 cr)
• HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
• RELS 5504 - Development of Israelite Religion II (3.0 cr)
• CNES 3016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• CNES 3074 - Exploring the Quran: An intellectual odyssey with Islam’s holy scripture [AH] (3.0 cr)
or RELS 3704 - Exploring the Quran: An intellectual odyssey with Islam’s holy scripture [AH] (3.0 cr)
• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
• CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• CNES 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or JWST 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or RELS 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or ANTH 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
• CNES 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or JWST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or RELS 3502W - Ancient Israel: From Conquest to Exile (3.0 cr)
or HIST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
• CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• CNES 3601W - Sexuality and Gender in Ancient Greece and Rome [AH, WI] (3.0 cr)
• COPT 5001 - Elementary Coptic (3.0 cr)
or COPT 5002 - Elementary Coptic (3.0 cr)
• GRK 5100 - Advanced Reading (3.0 cr)
or GRK 5200 - Biblical Greek (3.0 cr)
• LAT 5000 - Advanced Reading in Later Latin (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3092 - Jesus in History [HIS] (3.0 cr)
or HIST 3092 - Jesus in History [HIS] (3.0 cr)
or RELS 3092 - Jesus in History [HIS] (3.0 cr)
• CNES 3121 - Gender and Body in Early Christianity [AH] (3.0 cr)
or CNES 5121 - Gender and Body in Early Christianity [AH] (3.0 cr)
or RELS 3121 - Gender and Body in Early Christianity [AH] (3.0 cr)
or RELS 5121 - Gender and Body in Early Christianity [AH] (3.0 cr)
• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)

Early Judaism
Take 0 or more credit(s) from the following:
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3601W - Sexuality and Gender in Ancient Greece and Rome [AH, WI] (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• HEBR 5200 - Advanced Classical Hebrew (3.0 cr)
• HEBR 5300 - Post-Biblical Hebrew: Second Temple Period (3.0 cr)
• CNES 3374 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
or RELS 3374 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• CNES 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or JWST 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or RELS 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or ANTH 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
• CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

Capstone
Students conduct independent research under a faculty member and produce a substantial, original research paper. Using documents or primary sources along with secondary sources, students show their mastery of disciplinary methodologies and their knowledge and understanding of ancient sources and modern scholarship related to their chosen topic.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Biblical Studies BA capstone, but they do need to replace the 4 credits with another upper-division CNES elective.
• CNES 3951W - Capstone [WI] (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
• CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
• CNES 3951W - Capstone [WI] (4.0 cr)
• CNES 3016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• CNES 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or JWST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or RELS 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or HIST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
Twin Cities Campus
Biblical Studies Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 28

The academic study of the Bible is an extraordinarily broad interdisciplinary field. Research in the field can involve many disciplines, including a number of ancient and modern languages, archaeology, history, various social sciences (including comparative religion), and literary studies. Biblical studies focuses on the Hebrew Bible and the New Testament in terms of their formation, cultural settings, and the history of their interpretation. The minor lets students who might not have the linguistic foundation to read the biblical texts in their original languages pursue more advanced biblical studies.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 3 courses before admission to the program.

Students must complete an introductory course, plus the first year of Greek or Hebrew before declaring the minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Introductory Course
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
  • CNES 1082 - Jesus in History [HIS] (3.0 cr)
  or RELS 1082 - Jesus in History [HIS] (3.0 cr)
  or HIST 1082 - Jesus in History [HIS] (3.0 cr)
  or CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)

Preparatory Greek or Hebrew
Take either the Greek or Hebrew 2-course language sequence for 10 credits. In select cases, students with advanced proficiency may be exempt from taking one or more of these courses. Placement is determined by the Hebrew and Greek Language Coordinators.
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
  Classical Greek
  • GRK 1001 - Beginning Classical Greek I (5.0 cr)
  • GRK 1002 - Beginning Classical Greek II (5.0 cr)
  Biblical Hebrew
  • HEBR 1101 - Beginning Biblical Hebrew I (5.0 cr)
  • HEBR 1102 - Beginning Biblical Hebrew II (5.0 cr)

Minor Requirements
Students are required to complete 2 semester(s) of Greek or Hebrew, with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

A given course may only count towards one major requirement.

Students may earn a BA or minor in biblical studies, but not both.

Electives
Take a minimum of 15 credits in at least two of the following three content areas: Hebrew Bible, New Testament and Early Christianity, and Early Judaism.
Take 15 or more credit(s) including 2 or more sub-requirements(s) from the following:
Hebrew Bible
Take 0 or more credit(s) from the following:
• AKKA 5011 - Elementary Akkadian I (3.0 cr)
• AKKA 5012 - Elementary Akkadian II (3.0 cr)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 5713 - Introduction to Ugarit (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• HEBR 5200 - Advanced Classical Hebrew (3.0 cr)
• HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
• RELS 5504 - Development of Israelite Religion II (3.0 cr)
• CNES 3016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• CNES 3074W - Exploring the Qur’an: An intellectual odyssey with Islam’s holy scripture [AH] (3.0 cr)
or RELS 3704W - Exploring the Qur’an: An intellectual odyssey with Islam’s holy scripture [AH] (3.0 cr)
• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• CNES 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or JWST 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or RELS 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
or ANTH 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
• CNES 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or JWST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or JWST 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or HIST 3502W - Ancient Israel: From Conquest to Exile [WI] (3.0 cr)
or HIST 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or JWST 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)

New Testament and Early Christianity
Take 0 or more credit(s) from the following:
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
or CNES 3601W - Sexuality and Gender in Ancient Greece and Rome [AH, WI] (3.0 cr)
• COPT 5001 - Elementary Coptic (3.0 cr)
or COPT 5002 - Elementary Coptic (3.0 cr)
or GRK 5100 - Advanced Reading (3.0 cr)
or GRK 5200 - Biblical Greek (3.0 cr)
or LAT 5100 - Advanced Reading (3.0 cr)
or LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
or CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
or CNES 3092 - Jesus in History [HIS] (3.0 cr)
or HIST 3092 - Jesus in History [HIS] (3.0 cr)
or RELS 3092 - Jesus in History [HIS] (3.0 cr)
or CNES 3121 - Gender and Body in Early Christianity [AH] (3.0 cr)
or CNES 5121 - Gender and Body in Early Christianity [AH] (3.0 cr)
or RELS 3121 - Gender and Body in Early Christianity [AH] (3.0 cr)
or RELS 5121 - Gender and Body in Early Christianity [AH] (3.0 cr)

• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)

• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)

• Early Judaism

  Take 0 or more credit(s) from the following:
  • CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
  • CNES 3601W - Sexuality and Gender in Ancient Greece and Rome [AH, WI] (3.0 cr)
  • GRK 5200 - Biblical Greek (3.0 cr)
  • HEBR 5200 - Advanced Classical Hebrew (3.0 cr)
  • HEBR 5300 - Post-Biblical Hebrew: Second Temple Period (3.0 cr)
  • CNES 3074 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
    or RELS 3074 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
  • CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
    or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
    or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  • CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
    or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
    or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  • CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
    or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
    or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
  • CNES 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
    or JWST 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
    or RELS 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
    or ANTH 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
  • CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
    or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
    or RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  • CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
    or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
    or JWST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
    or RELS 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
    or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
**Twin Cities Campus**

**Biology, Society, and Environment B.A.**

**Geography, Environment, Society**

**College of Liberal Arts**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 66 to 84
- Degree: Bachelor of Arts

The biology, society, and environment program (BSE), housed in the Department of Geography, Environment, and Society, is a multidisciplinary biology program in the College of Liberal Arts (CLA). Majors in the program take courses in the biological, environmental, and social sciences and humanities throughout the University and frequently choose a focus on either human or environmental biology.

An extensive and rigorous curriculum reflects the breadth of subject matter and learning experiences vital to ensuring graduating students have maximum opportunities for employment in today’s job market and are particularly well-prepared to successfully apply to various graduate and professional programs. Major requirements are quite flexible: students are encouraged to tailor elective course options around an intellectual goal or a topical theme; for example, students have combined a specialization in human biology with a thematic focus on health policy or bioethics. Others have combined plant ecology with a focus on global environmental solutions or history of science. Still others have studied evolutionary biology through an analytic lens focusing on science and culture. Many of our students also choose their coursework in preparation for the entrance exam to a health professional degree program and to complete any necessary prerequisite courses.

Students receive comprehensive training in biology, chemistry, math, and physics. They are also exposed to questions about the relevance of biology to social, environmental, and health-related problems from the various perspectives offered in the biosciences, social sciences, and humanities. The elective courses allow students to explore and deepen their understanding of biological and social systems, and their intersections.

Required and elective courses in the curriculum offer individual students the opportunity to study scientific practices and social and environmental problems. Just as importantly, students have the opportunity to:
- Develop critical thinking skills and creative approaches to understanding such practices and problems using an array of conceptual and theoretical frameworks,
- Consider the ethical issues inherent to both practices and problems and, of course, solutions,
- Enhance their ability to communicate, particularly through writing,
- Work as a team member to bridge disciplinary and institutional divisions.

Students are strongly encouraged to carry out independent research appropriate to the students intellectual, career, and professional development goals. The capstone, required of all CLA majors, offers a unique learning experience because it allows individuals to work with faculty members in their laboratories and in the field across the University of Minnesota’s colleges and schools. Some students complete a formal Senior Thesis in the History of Medicine or select a wide variety of research topics, others complete professional grade posters, deliver oral presentations, or produce innovative original works that cross disciplinary divides.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](http://www.admissions.umn.edu).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](http://www.registrar.umn.edu/liberal-education). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students are required to take 4 semester(s) of any second language.
CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Biology, Society, and Environment BA is BSE.

The major curriculum includes courses in biology, chemistry, physics, and mathematics.

A given course may only count towards one major requirement.

At least 18 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus. This includes 9 credits of biosciences and 9 credits of science and society.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

### BSE Foundations

Take exactly 2 course(s) totaling 5 - 6 credit(s) from the following:

**An Introduction to Biology, Society, and Environment**

Take BSE 2001 within one semester of declaring the BSE major or prior to completing 90 credits.

Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:

- **BSE 2001** - An Introduction to Biology, Society, and Environment (2.0 cr)

**Foundations in Science and Society**

Students may petition to substitute an additional Science & Society Elective course or a transfer course to fulfill this requirement.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

- **ANTH 1003W** - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
- **ANTH 1003V** - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)
- **GEOG 1301W** - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- **PHIL 1002W** - Introduction to Philosophy [AH, WI] (4.0 cr)
- **PHIL 1003W** - Introduction to Ethics [CIV, WI] (4.0 cr)
- **SOC 1001** - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
- **SOC 1011V** - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

### Required Courses

Take 6 required courses for a total of 19-24 credits, by completing three Biosciences courses, two Science & Society courses, and one Science & Society Methods course.

### Required Biosciences Courses

Take exactly 3 course(s) totaling 10 - 12 credit(s) from the following:

**General Biology**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

- **BIOL 1009** - General Biology [BIOL] (4.0 cr)
- **BIOL 1009H** - Honors: General Biology [BIOL] (4.0 cr)

**Other Biosciences Courses**

The two courses must be from different areas, as divided below.

Take exactly 2 course(s) totaling 6 - 8 credit(s) including exactly 2 sub-requirements(s) from the following:

**Cell Biology**

- **GCD 3033** - Principles of Cell Biology (3.0 cr)

**Genetics**

- **BIOL 4003** - Genetics (3.0 cr)
  
- **GCD 3022** - Genetics (3.0 cr)

**Ecology**

(BIOL 3807 at Itasca Experiment Station)

- **EEB 3407** - Ecology (3.0 cr)
- **EEB 3408W** - Ecology [WI] (4.0 cr)
- **EEB 3807** - Ecology (4.0 cr)

**Evolution**

- **EEB 3409** - Evolution (3.0 cr)

### Required Science & Society Courses

The two courses must be from different departments, as divided below.

Take exactly 2 course(s) totaling 6 - 8 credit(s) including exactly 2 sub-requirements(s) from the following:

**Anthropology**

- **ANTH 3306W** - Medical Anthropology [GP, WI] (3.0 cr)

**Biology, Society, and Environment**

- **BSE 3361W** - Geography and Public Policy [WI] (3.0 cr)
or GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)

- Cultural Studies & Comparative Literature
  - CSCL 3323 - Science and Culture [AH] (3.0 cr)
or CSCL 3322 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)

- Geography
  - GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
or GEOG 3379 - Environment and Development in the Third World [SOC, ENV] (3.0 cr)
  or GLOS 3303 - Environment and Development in the Third World [SOC, ENV] (3.0 cr)

- Global Studies
  - GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
or GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or GWSS 3205 - Life for Sale: Global Debates on Environment, Science and Society (3.0 cr)

- Philosophy
  - PHIL 1005 - Scientific Reasoning (4.0 cr)
or PHIL 1005H (inactive) (4.0 cr)
or PHIL 3602 - Science, Technology, and Society (3.0 cr)
or PHIL 4607 - Philosophy of the Biological Sciences (3.0 cr)
or PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

- Sociology
  - SOC 4246 - Sociology of Health and Illness (3.0 cr)
or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 (inactive) [ENV] (3.0 cr)

**Required Science & Society Methods Course**
Take 1 Science & Society Methods course for 3-4 credits. Some courses are only available to students completing majors and minors in particular departments.

Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:

**Quantitative Methods**
Take 0 or more course(s) from the following:
- SOC 3811 - Social Statistics [MATH] (4.0 cr)
or GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)

**Qualitative Methods**
Take 0 or more course(s) from the following:
- ANTH 4035 - Ethnographic Research Methods (3.0 cr)
or SOC 3801 - Sociological Research Methods (4.0 cr)
or PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

**Research Methods in History of Science & Medicine**
Take 0 or more course(s) from the following:
- HSCI 3401 - Ethics in Science and Technology [HIS, CJV] (3.0 cr)
or HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
or HMED 3002W - Health Care in History II [HIS, WI] (4.0 cr)
or HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
or HMED 3065 - Body, Soul, and Spirit in Medieval and Renaissance European Medicine (3.0 cr)
or HMED 3075 - Technology and Medicine in Modern America [HIS, TS] (3.0 cr)
or HMED 3055 - Women, Health, and History [HIS, DSJ] (3.0 cr)
or HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)
or HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)

**Required Supporting Sciences Courses**
Take 6 Required Supporting Sciences courses (with two labs) for a total of 22-23 credits.

**Calculus**
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

**Physics**
Physics 1201W is preferred. PHYS 1001W does not meet this requirement.
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:
• PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Chemistry
No student may switch tracks after Chemistry II/Chemistry for Life Sciences II. Track 1 is the standard Chemistry sequence. Students completing CHEM 2301/H (Track 1) have the option to take CHEM 2302 and CHEM 2311 as BioSciences Electives. Students completing Track 2 will not have completed the prerequisites for CHEM 2301/H, and the Track II courses may not fulfill prerequisites for subsequent CHEM courses offered at UMN-TC.

**Track I: Chemistry**
Take exactly 5 course(s) totaling exactly 11 credit(s) from the following:

- **Chemistry I**
  - CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

- **Chemistry II**
  - CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  - CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

- **Organic Chemistry**
  - CHEM 2301 - Organic Chemistry I (3.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

**Track II: Chemistry for the Life Sciences**
Track II students can apply CHEM 2085 as one of their BioSciences non-lab Electives, choosing Track II will not result in more credits required for the BA.
Take exactly 6 course(s) totaling exactly 13 credit(s) from the following:

- **Chemistry for the Life Sciences I**
  - CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

- **Chemistry for the Life Sciences II**
  - CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
  - CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)

- **Chemistry for the Life Sciences III**
  - CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
  - CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

Biochemistry
BIOC 3021 meets 3 of the 9 credits required in upper-division UMN-TC biosciences courses.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• BIOC 3021 - Biochemistry (3.0 cr)

Electives
Take 6 elective courses for a total of 18-27 credits, by completing 9-15 credits of Biosciences Electives and 9-12 credits of Science & Society Electives. Select coursework in consultation with BSE advisor and UMN-TC faculty. Students may wish to consult admissions staff of prospective post-graduate programs about their suggested prerequisites.

Biosciences Electives
Take 3 Biosciences Electives for a total of 9-15 credits. One of the three Bioscience Electives must be a laboratory course. Developing an area of specialization is strongly encouraged (e.g., human biology, plant biology & ecology, microbial genetics). Students are advised not to take more advanced courses without adequate grades in prerequisite courses. Up to one Learning Abroad course is allowed for Biosciences Elective credit; no HECUA credit allowed.

**Upper division requirement**
Two Biosciences Electives must be at the 3xxx-5xxx level. CHEM 2302, 2304 and 2311 and VBS 2032 do fulfill this requirement, but do not meet the UMNTC residency requirement (upper division UMNTC residency requirement).

**Laboratory Course requirement**
One Biosciences Elective must be a laboratory course, taken concurrently with a lecture course to qualify for major credit.
- CHEM 2311 and CHEM 2312H do not fulfill the Lab requirement
- 1 and 2 cr labs do not count as an additional course (ANAT 3601 & 3602 = 1 course); 3 cr labs may count as a course
- ANTH 1001, BIOL 2012, PMB 2022, VBS 2032, or the 2nd course of a two semester sequence in general biology, with labs, taken at another college DOES fulfill the Lab requirement
- For reference, see list of Biosciences Electives Qualifying Laboratory Courses, with course titles, at the end of this catalog description
Biosciences Electives - Areas of Specialization

Take 3 or more course(s) totaling 9 - 15 credit(s) from the following:

**Organic Chemistry**

Take 0 or more course(s) from the following:
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- or CHEM 2312H - Honors Organic Lab (5.0 cr)

**Organismal Biology**

Take 0 or more course(s) from the following:
- BIOL 2012 - General Zoology (4.0 cr)
- PMB 2022 - General Botany (3.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- BIOL 3270 (Inactive) (3.0 cr)
- FW 4101 - Herpetology (4.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- PMB 3002 - Plant Biology: Function (2.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)

**Climate Change and Environmental Systems**

Take 0 or more course(s) from the following:
- EEB 4611 - Biogeochemical Processes (3.0 cr)
- ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
- GEOG 6426 - Climatic Variations (3.0 cr)

**Ecological Systems**

Take 0 or more course(s) from the following:
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
- ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
- ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
- ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
- FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
- FNRM 3501 - Arboriculture: Selection and Maintenance of Trees (3.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
- VPM 3850W - Health and Biodiversity [ENV, WI] (3.0 cr)
- EEB 3407 - Ecology (3.0 cr)
- or EEB 3408W - Ecology [WI] (4.0 cr)
- or EEB 3807 - Ecology (4.0 cr)
- BIOL 4590 - Coral Reef Ecology (2.0 cr)
- BIOL 4596 - Coral Reef Ecology (Dive Trip) (2.0 cr)

**Evolutionary Biology Options**

Take 0 or more course(s) from the following:
- ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
- EEB 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- EEB 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
- or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
- EEB 3409 - Evolution (3.0 cr)
- ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
- or EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)

**Genetic, Cellular, & Developmental Biology**

Take 0 or more course(s) from the following:
• **GCD 3033** - Principles of Cell Biology (3.0 cr)
• **GCD 3485** - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
• **GCD 4111** - Histology: Cell and Tissue Organization (4.0 cr)
• **GCD 4134** - Endocrinology (3.0 cr)
• **GCD 4143** - Human Genetics and Genomics (3.0 cr)
• **GCD 4151** - Molecular Biology of Cancer (3.0 cr)
• **GCD 4161** - Developmental Biology (3.0 cr)
• **GCD 3022** or **BIOL 4003** - Genetics (3.0 cr)

**Biology of Humans**

Take 0 or more course(s) from the following:

• **ANAT 3001** - Human Anatomy (3.0 cr)
• **ANAT 3608H** - Principles of Human Anatomy Laboratory for Honors Students (3.0 cr)
• **NSCI 3101** - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• **NSCI 3102W** - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• **NSCI 4101** - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
• **NSCI 4105** - Neurobiology Laboratory I (3.0 cr)
• **PHSL 3050** - Physiology From Cells to Systems (3.0 cr)
• **PHSL 3061** - Principles of Physiology (4.0 cr)
• **ANTH 3405** - Human Skeletal Analysis (4.0 cr)
• **ANTH 5405** - Human Skeletal Analysis (4.0 cr)

**Human Anatomy with Lab Options**

(Take lab and lectures concurrently, to receive major credit)

Take 0 - 2 course(s) from the following:

• **ANAT 3601** - Principles of Human Anatomy (3.0 cr)
• **ANAT 3611** - Principles of Human Anatomy (3.0 cr)
• **ANAT 3602** - Principles of Human Anatomy Laboratory (2.0 cr)
• **ANAT 3608H** - Principles of Human Anatomy Laboratory for Honors Students (3.0 cr)
• **ANAT 3612** - Principles of Human Anatomy Laboratory (2.0 cr)

**Physiology of Humans and Other Animals with Lab Options**

(Take lab and lectures concurrently, to receive major credit)

Take 0 - 2 course(s) from the following:

• **PHSL 3051** - Human Physiology (4.0 cr)
• **ANSC 3301** - Human and Animal Physiology (3.0 cr)
• **ANSC 3302** - Human and Animal Physiology Laboratory (1.0 cr)
• **Biol 3211** - Physiology of Humans and Other Animals (3.0 cr)
• **Biol 3205** - Animal Diversity Laboratory (2.0 cr)
• **Biol 3211** - Physiology of Humans and Other Animals (3.0 cr)
• **Biol 2007** - Marine Animal Diversity Laboratory (1.0 cr)

**Human and Animal Behavior**

Take 0 or more course(s) from the following:

• **EEB 4134** - Introduction to Ornithology (4.0 cr)
• **EEB 3411** - Introduction to Animal Behavior (3.0 cr)
• **EEB 3412W** - Introduction to Animal Behavior [WI] (4.0 cr)
• **EEB 3811W** - Introduction to Animal Behavior [WI] (4.0 cr)
• **EEB 4329** - Primate Ecology and Social Behavior (3.0 cr)
• **ANTH 4329** - Primate Ecology and Social Behavior (3.0 cr)

**Microbial Biology**

Take 0 or more course(s) from the following:

• **ESCI 4801** - Geomicrobiology (3.0 cr)
• **PMBC 4111** - Microbial Physiology and Diversity (3.0 cr)
• **MICB 4161W** - Eukaryotic Microbiology [WI] (3.0 cr)
• **MICB 4171** - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
• **MICB 4251** - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
• **MICB 4235** - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
• **MICB 4331** - Biology of Microorganisms (5.0 cr)
• **MICB 4215** - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• **MICB 4225W** - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• **MICB 4235** - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
• **MICB 4331** - Biology of Microorganisms (5.0 cr)
• **VBS 2032** - General Microbiology With Laboratory (5.0 cr)
• **PMBC 4121** - Microbial Ecology and Applied Microbiology (3.0 cr)
• **MICB 4131** - Immunology (3.0 cr)
• **VPM 4131** - Immunology (3.0 cr)

**Plant Breeding & Agronomy**

Take 0 or more course(s) from the following:

• **PLSC 3005W** - Introduction to Plant Physiology [WI] (4.0 cr)
• **HORT 4071W** - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
**Biosciences Electives - Qualifying Laboratory Courses**

At least one of the Biosciences Electives must be a laboratory course. The courses listed below qualify as laboratory courses for the Biosciences Elective requirement.

Take 0 - 2 course(s) from the following:

**Courses with a Laboratory Component Included**

Take 0 - 1 course(s) from the following:
- ANAT 3608H - Principles of Human Anatomy Laboratory for Honors Students (3.0 cr)
- ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
- BIOL 2012 - General Zoology (4.0 cr)
- PMB 2022 - General Botany (3.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
- EEB 4134 - Introduction to Ornithology (4.0 cr)
- ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
- FW 4101 - Herpetology (4.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
- MICB 3301 - Biology of Microorganisms (5.0 cr)
- MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- PHSL 3051 - Human Physiology (4.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- EEB 3407 - Ecology (3.0 cr)
  - or EEB 3408W - Ecology [WI] (4.0 cr)
  - or EEB 3807 - Ecology (4.0 cr)
- EEB 3409 - Evolution (3.0 cr)

**Courses Requiring Concurrent Registration with a Laboratory Course**

Take 0 - 2 course(s) from the following:

Students taking ANAT 3601 or 3611 must concurrently register for ANAT 3602, 3608H, or 3612
- ANAT 3601 - Principles of Human Anatomy (3.0 cr)
  - or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
  - with ANAT 3602 - Principles of Human Anatomy Laboratory (2.0 cr)
  - or ANAT 3608H - Principles of Human Anatomy Laboratory for Honors Students (3.0 cr)
  - or ANAT 3612 - Principles of Human Anatomy Laboratory (2.0 cr)
- ANSC 3301 - Human and Animal Physiology (3.0 cr)
  - with ANSC 3302 - Human and Animal Physiology Laboratory (1.0 cr)
- BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
  - with BIOL 2005 - Animal Diversity Laboratory (2.0 cr)
  - or BIOL 2007 - Marine Animal Diversity Laboratory (1.0 cr)
- PMB 3002 - Plant Biology: Function (2.0 cr)
  - with PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)

**Science & Society Electives**

Take 3 Science & Society Electives for a total of 9-12 credits. Exploring a theme is suggested. Some examples include: ethics in health care; health policy; global environmental solutions; science and social change; science & culture: public understanding of science.

Take exactly 3 course(s) totaling 9 - 12 credit(s) from the following:

**Anthropology**

Take no more than 2 course(s) from the following:
- ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
- ANTH 3035 - Anthropologies of Death [SOC, GP] (3.0 cr)
- ANTH 3036 - The Body in Society (3.0 cr)
- ANTH 4075 - Cultural Histories of Healing [SOC, GP] (3.0 cr)
- ANTH 5031W - [Inactive][WI] (3.0 cr)

**Cultural Studies**

Take no more than 2 course(s) from the following:
- CSCL 3323 - Science and Culture [AH] (3.0 cr)
- CSCL 3322 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)
- CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)

**Environmental Policy and Sustainability**

Take no more than 2 course(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• HORT 4850 - Pollinator Protection in Managed Landscapes (3.0 cr)
• SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)

Geography of Health and Environments
Take no more than 2 course(s) from the following:
• GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  or GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)

Health & Environmental Policy
Take no more than 2 course(s) from the following:
• BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
  or GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)

Health & Environment in the City
Take no more than 1 course(s) from the following:
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)

Interdisciplinary Gender & Inequality Studies
Take no more than 2 course(s) from the following:
• GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
• GWSS 3215 - Bodies That Matter: Feminist Approaches to Disability Studies [DSJ] (3.0 cr)
• GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
• GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
  or GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)

Interdisciplinary Global Studies
Take no more than 2 course(s) from the following:
• GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
  or SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
• GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)

History of Medicine and Science
Take no more than 2 course(s) from the following:
• HSCI 2333V - Honors Course: A Century of Science in Modern America [HIS, CIV, WI] (3.0 cr)
• HSCI 3211 - Biology and Culture in the 19th and 20th Centuries [HIS, CIV] (3.0 cr)
• HSCI 3242 - Navigating a Darwinian World [HIS] (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
• HSCI 3332 - Science in the Shaping of America [HIS, DSJ] (3.0 cr)
• HSCI 3401 - Ethics in Science and Technology [HIS, CIV] (3.0 cr)
• HSCI 3815 - Making Modern Science: Atoms, Genes and Quanta [HIS, GP] (3.0 - 4.0 cr)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)

Medical & Environmental Ethics
Take no more than 2 course(s) from the following:
• BTHX 5100 - Introduction to Clinical Ethics (3.0 cr)
• BTHX 5325 - Biomedical Ethics (3.0 cr)
• PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
• PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
• PHIL 3304 - Law and Morality (4.0 cr)
• PHIL 3305 - Medical Ethics (4.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)  
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

• Philosophy of Science
  Take no more than 2 course(s) from the following:
  • PHIL 3601W - Scientific Thought [WI] (4.0 cr)
  • PHIL 3602 - Science, Technology, and Society (3.0 cr)
  • PHIL 3607 - Philosophy of Psychology (4.0 cr)
  • PHIL 4607 - Philosophy of the Biological Sciences (3.0 cr)

• Psychology
  NURS 2001 is equivalent to taking NURS 3690 and 3691.
  Take no more than 2 course(s) from the following:
  • PSY 3061 - Introduction to Biological Psychology (3.0 cr)
  • PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
  • PSY 5137 - Introduction to Behavioral Genetics (3.0 cr)
  • PSY 5135 - Psychology of Individual Differences (3.0 cr)
  or PSY 5135 - Psychology of Individual Differences (3.0 cr)

• Public Health
  Take no more than 2 course(s) from the following:
  • PUBH 3102 - Issues in Environmental and Occupational Health (3.0 cr)

• Science, Health & Environmental Communication
  Take no more than 2 course(s) from the following:
  • ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
  • JOUR 5541 - Mass Communication and Public Health (3.0 cr)
  • SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
  • WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
  • WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
  • WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)

• Sociology
  Take no more than 2 course(s) from the following:
  • SOC 4246 - Sociology of Health and Illness (3.0 cr)
  • AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
  • BSE 3591W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or BSE 3592W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  • GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  • SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
  or GLOS 4305 [Inactive] [ENV] (3.0 cr)
  • SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
  or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)

• Theory and Practice
  Take no more than 2 course(s) from the following:
  • HECU 3571W - Inequality in America: A Political Economy Approach [WI] (4.0 cr)
  • HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity [Field Seminar] (4.0 cr)
  • HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Climate & Environment Justice (4.0 cr)
  • HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change (4.0 cr)
  • ID 3595W [Inactive] [CIV, WI] (4.0 cr)
  • ID 3596 [Inactive] (4.0 cr)

Senior Project
  Take 1-2 courses for a total of 2-4 credits. Students are responsible for identifying a senior project supervisor and should begin planning during their Junior Year. All students attend a planning workshop and submit a senior project proposal that must be approved by the BSE office prior to beginning work. All forms should be submitted by published deadlines. A written component is required and students must register A-F.

  Option 1: Directed Research with a UMNTC Faculty Supervisor
  Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  a) BSE Project Registration
  Students supervised by GES (BSE, GEOG, GIS, URBS) & AHS faculty (Medical School, Dental School and others) register for a minimum of 3 credits in:
  • BSE 3996 - Senior Project Directed Research (3.0 - 4.0 cr)
or BSE 3996H - Honors: Senior Project Directed Research (3.0 - 4.0 cr)

•b) Science & Society Project

Students supervised by ANTH, BTHX, CSCL, GLOS, GWSS, HSCI, PHIL, POL, PUBH or SOC faculty register for a minimum of 3 credits in:

•ANTH 4993 - Directed Study (1.0 - 6.0 cr)
or
•ANTH 4994W - Directed Research [WI] (1.0 - 6.0 cr)
or
•BTHX 5900 - Independent Study in Bioethics (1.0 - 4.0 cr)
or
•CSCL 4993 - Directed Study (1.0 - 3.0 cr)
or
•GLOS 5994 - Directed Research (1.0 - 4.0 cr)
or
•GWSS 4994 - Directed Research (1.0 - 8.0 cr)
or
•HSCI 5993 - Directed Studies (1.0 - 15.0 cr)
or
•HSCI 5994 - Directed Research (1.0 - 15.0 cr)
or
•PHIL 3993 - Directed Studies (1.0 - 3.0 cr)
or
•POL 4970 - Individual Reading and Research (1.0 - 4.0 cr)
or
•PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
or
•PUBH 3093 - Directed Study: Public Health (1.0 - 4.0 cr)
or
•PUBH 3893 - Directed Study: Health Services Research and Policy (1.0 - 4.0 cr)
or
•SOC 4093 - Directed Study (1.0 - 4.0 cr)

•c) Biosciences Project

Students supervised by faculty members appointed in College of Biological Sciences or other UMNTC colleges register for a minimum of 3 credits in a directed studies/research course. Follow procedures of that college.

or Option 2: Senior Project Seminar

Contact instructor prior to registration of these courses; seats are limited.

Take 1 or more course(s) totaling 2 - 4 credit(s) from the following:

•HMED 4965W - Senior Research in Medical History (3.0 cr)
•URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)

or Option 3: Supplemental Research Project

Senior Project is supervised by an instructor teaching a Science & Society Required or Elective course in a CLA Department. Obtain permission from instructor and BSE advisor prior to first day of class. Concurrently register for an eligible Science & Society course and 2 credits in one of the following courses (A-F only):

Take 1 or more course(s) totaling 2 or more credit(s) from the following:

•BSE 3997 - Senior Project (2.0 cr)
or
•ANTH 4993 - Directed Study (1.0 - 6.0 cr)
or
•CSCL 4993 - Directed Study (1.0 - 3.0 cr)
or
•GLOS 5994 - Directed Research (1.0 - 4.0 cr)
or
•GWSS 4994 - Directed Research (1.0 - 8.0 cr)
or
•PHIL 3993 - Directed Studies (1.0 - 3.0 cr)
or
•PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
or
•SOC 4093 - Directed Study (1.0 - 4.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements. BSE majors are also encouraged to take at least one additional writing intensive course in an area related to biosciences. Honors students must complete a course from this list.

Take 0 - 1 course(s) from the following:

•ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
or
•ANTH 4994W - Directed Research [WI] (1.0 - 6.0 cr)
or
•ANTH 5031W [Inactive] [WI] (3.0 cr)
or
•PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
or
•PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
or
•CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
or
•EEB 3408W - Ecology [WI] (4.0 cr)
or
•EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
or
•EEB 4098W - Ecosystem Ecology [ENV, WI] (3.0 cr)
or
•ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
or
•ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
or
•ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
or
•ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
or
•ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
or
•GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
or
•GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
or
•HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
or
•HMED 3002W - Health Care in History II [HIS, WI] (4.0 cr)
or
•HMED 4965W - Senior Research in Medical History (3.0 cr)
• HORT 4071W - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
• MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
• MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
• PHIL 3601W - Scientific Thought [WI] (4.0 cr)
• PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• VPM 3850W - Health and Biodiversity [ENV, WI] (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
• WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)
• AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
  or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
  or GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
• GLOS 3613V - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or HON 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
  or GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
Twin Cities Campus

Career Readiness Certificate
CLA Dean's Office
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 6 to 15
- Degree: Career Readiness Certificate

The career readiness certificate is earned by students who intentionally and intensively engage in the career development process during their undergraduate program. The certificate program challenges students to think about the totality of their liberal arts degree and the acquisition of the core career competencies. The curriculum is designed to support students from the exploration stage of the career management process and prepares them to compete for significant experiences, and ultimately reinforces the necessary reflection required to articulate their proficiency in the core career competencies.

The certificate will signal to potential employers and graduate programs that students have demonstrated the ability to describe their unique academic path in the College of Liberal Arts, what they’ve learned in the process, and how that relates to their readiness. It encourages the integration of academics and co-curricular experiences through the common language of core career competencies and connects the academic experience to their professional life.

The certificate is open to all CLA undergraduate students.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Introductory Course(s)
Take 1 - 2 course(s) totaling 1 - 6 credit(s) from the following:

Options for First-Year Students
- CLA 1001 - CLA First-Year Experience I (1.0 cr)
  or CLA 1005 - Introduction to Liberal Arts Learning (2.0 cr)
- CLA 1002 - CLA First-Year Experience II (1.0 cr)
  or CLA 2005 - Introduction to Liberal Education and Responsible Citizenship (2.0 cr)

Options for Transfer Students
Note: ID 3101 also fulfills the Career Exploration and Readiness Course Requirement.
- CLA 3001 - CLA Transfer Semester Experience (1.0 cr)
- CLA 3101 - Career Exploration for Transfer Students (2.0 cr)

Career Exploration and Readiness Course
Students who have taken ID 3101 to fulfill the Introductory Course(s) Requirement will have already fulfilled this requirement. Take exactly 1 course(s) totaling 1 - 2 credit(s) from the following:
- CLA 3002 - Career Kickstarter: Finding Internships and Other Career-Related Experiences (1.0 cr)
- CLA 3101 - Career Exploration for Transfer Students (2.0 cr)

Career Planning Course
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- CLA 3201 - Career Planning: Preparing for Your Post-Graduation Plans (2.0 cr)
or CLA 3205 - Law School Exploration (2.0 cr)

Career Readiness Experiences for Credit

Students are required to participate in a minimum of two career-related experiences and earn academic credit. These experiences must have significant contact hours, structured reflection alongside, and learning goals. Two experiences may be done concurrently but they must be distinct experiences. With department approval, students who complete HECUA Domestic or International Program or the Community Engaged Scholars Program will satisfy the Career Readiness Experiences for Credit requirement.

Take 2 or more course(s) totaling 2 or more credit(s) from the following:

Internship for Credit

Take 0 or more course(s) from the following:

• AFRO 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• AMES 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• AMIN 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• AMST 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• ANTH 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• ARTH 3896 - Directed Professional Experience (1.0 - 2.0 cr)
• ARTS 3896 - Internship (1.0 - 3.0 cr)
• BSE 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• CHIC 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• CLA 3890 - Internship Reflection: Building on your Summer Internship Experience (1.0 cr)
• CLA 3896 - Internship Reflection: Making Meaning of Your Experience (1.0 cr)
• CNES 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• COMM 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• CSCI 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• ENGL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• GEOG 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• GLOV 3896 - Global Studies Internship (3.0 cr)
• GWSS 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• HIST 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• ITAL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• JOUR 3896 - Directed Internship (1.0 cr)
• JWST 3896 - Jewish Studies Internship for Academic Credit (1.0 - 4.0 cr)
• LING 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• MUS 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• PHIL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• POL 3080 - Internship in Politics or Government (3.0 - 13.0 cr)
• RELS 3896 - Internship in Religion, Society, and Culture (1.0 - 4.0 cr)
• SCMC 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• SLHS 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• STAT 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• TH 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• URBS 3896 - Urban Studies Internship Seminar (2.0 cr)
• WRIT 3896 - Internship in Technical Writing and Communication (3.0 cr)
• Students may complete an internship abroad to satisfy one of the two Career Readiness Experiences for Credit.

Take 0 or more course(s) from the following:

• FLOR 3009 - Internships in Florence: A Comparative Approach to the Italian Workforce (3.0 cr)
• LNDN 3375 - Global Internship Course: London (3.0 - 6.0 cr)
• MADR 3012 - Internships in Spain (3.0 - 6.0 cr)
• MSID 4005 - Advanced International Development Internship (4.0 cr)
• ROME 3013 - Internships in Rome: A Comparative Approach to the Italian Workforce (3.0 - 6.0 cr)
• SDNY 3375 - Global Internship Course: Sydney (3.0 - 6.0 cr)
• TLDO 3970 - Internships in Spain (3.0 - 6.0 cr)

• Learning Abroad Reflection for Credit

Take 0 or more course(s) from the following:

• OLPD 3332 - Global Identity: Connecting Your International Experience to Your Future (1.0 cr)

• Undergraduate Research for Credit

Please talk with your advisor about other credit-based research opportunities fulfilling this requirement.

Take 0 or more course(s) from the following:

• CLA 1052 - Dean's First-Year Research and Creative Scholars Program (2.0 - 3.0 cr)
• CLA 3896 - Global Internship Course: London (3.0 - 6.0 cr)
• MADR 4901 - Research Laboratory in Psychology (3.0 cr)

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Information current as of September 02, 2020

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• MSID 4007 - MSID Directed Research (4.0 cr)
Twin Cities Campus
Chemistry B.A.
Chemistry
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 59 to 67
• Degree: Bachelor of Arts

An active, modern program of chemical education at the undergraduate level must do more than simply train professional chemists. Chemistry, the central science, is an important component of many disciplines and should be accessible to all students seeking a liberal education. The chemistry department contributes actively to increasing the level of scientific literacy of all students. The program also serves students by recognizing different needs, interests, and career goals.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 3.20 already admitted to the degree-granting college
• 3.20 transferring from another University of Minnesota college
• 3.20 transferring from outside the University

Students must earn a C or better in CHEM 1062 and 2301.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
  Calculus I
  • MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  • Calculus II
    • MATH 1272 - Calculus II (4.0 cr)
    or MATH 1372 - CSE Calculus II (4.0 cr)
    or MATH 1572H - Honors Calculus II (4.0 cr)
  • Multivariable Calculus
    • MATH 2263 - Multivariable Calculus (4.0 cr)
    or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
    or MATH 2573H - Honors Calculus III (4.0 cr)

Physics
Take exactly 2 course(s) totaling 8 - 10 credit(s) from the following:
  Physics I
  • PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
  or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
  • Physics II
    • PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
    or PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
    or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
    or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Chemistry
Take exactly 5 course(s) totaling exactly 11 credit(s) from the following:
Chemistry I
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  with CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  with CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Chemistry II
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  with CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Organic Chemistry I
•CHEM 2301 - Organic Chemistry I (3.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Chemistry BA is CHEM.

At least 7 upper division credits in the major must be taken at the University of Minnesota Twin Cities.

Students may receive no more than one degree from the Department of Chemistry: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Courses
Take exactly 2 course(s) totaling exactly 5 credit(s) from the following:
•CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
•CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 cr)

Core Courses
Take exactly 5 course(s) totaling 16 - 17 credit(s) from the following:
•CHEM 2302 - Organic Chemistry II (3.0 cr)
or CHEM 2321H - Honors Elementary Organic Chemistry II (3.0 cr)
•CHEM 2311 - Organic Lab (4.0 cr)
or CHEM 2312H - Honors Organic Lab (5.0 cr)
•CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
•CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
•CHEM 4701 - Inorganic Chemistry (3.0 cr)

Advanced Chemistry Laboratory Electives or Research
Take exactly 2 course(s) totaling 4 - 9 credit(s) from the following:
•CHEM 4111W - Modern Instrumental Methods of Chemical Analysis Lab [WI] (2.0 cr)
•CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
•CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
•CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
•CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
•CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)

Directed Research
One directed research course for a maximum of 2 credits may count towards the Advanced Chemistry Laboratory Electives or Research requirement.
Take no more than 1 course(s) totaling at most 2 credit(s) from the following:
•CHEM 2094 - Directed Research (1.0 - 3.0 cr)
•CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
Electives
Take 3 or more credit(s) from the following:
Chemistry Electives
Take 0 or more credit(s) from the following:
• CHEM 4011 - Mechanisms of Chemical Reactions (3.0 cr)
• CHEM 4021 - Computational Chemistry (3.0 cr)
• CHEM 4066 - Chemistry of Industry (3.0 cr)
• CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
• CHEM 4201 - Materials Chemistry (3.0 cr)
• CHEM 4221 - Introduction to Polymer Chemistry (3.0 cr)
• CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
• CHEM 4321 - Organic Synthesis (3.0 cr)
• CHEM 4322 - Advanced Organic Chemistry (3.0 cr)
• CHEM 4352 - Physical Organic Chemistry (3.0 cr)
• CHEM 4361 - Interpretation of Organic Spectra (3.0 cr)
• CHEM 4411 - Introduction to Chemical Biology (3.0 cr)
• CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
• CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
• CHEM 4601 - Green Chemistry [ENV] (3.0 cr)
• CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
• CHEM 4715 - Physical Inorganic Chemistry (3.0 cr)
• CHEM 4725 - Organometallic Chemistry (3.0 cr)
• CHEM 4735 - Bioinorganic Chemistry (3.0 cr)
• CHEM 4745 - Advanced Inorganic Chemistry (3.0 cr)
• CHEM 5210 - Materials Characterization (4.0 cr)
• CHEM 5245 - Introduction to Drug Design (3.0 cr)
• CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
  or BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
• CHEM 4214 - Polymers (3.0 cr)
  or CHEN 4214 - Polymers (3.0 cr)
  or MATS 4214 - Polymers (3.0 cr)
• CHEM 4301 - Applied Surface and Colloid Science (3.0 cr)
  or BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
Other Electives
This is not an exhaustive list of courses that may count toward this requirement. Other advanced technical electives may be approved by the department.
Take 0 or more credit(s) from the following:
• BBE 3002 - Introduction to Engineering Design (3.0 cr)
• BBE 3012 - Transport in Biological Processes I (4.0 cr)
• BBE 3013 - Engineering Principles of Molecular and Cellular Processes (3.0 cr)
• BBE 3023 - Ecological Engineering Principles (3.0 cr)
• BBE 3033 - Material and Energy Balances in Biological Systems (3.0 cr)
• BBE 3043 - Biological and Environmental Thermodynamics (3.0 cr)
• BBE 3101 - Introductory Statics and Structures for Construction Management (3.0 cr)
• BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
• BBE 4013 - Transport in Biological Processes II (3.0 cr)
• BBE 4023W - Process Control and Instrumentation [WI] (3.0 cr)
• BBE 4302 - Biodegradation of Bioproducts (3.0 cr)
• BBE 4303 - Introduction to Bio-based Materials Science (3.0 cr)
• BBE 4305 - Pulp and Paper Technology (3.0 cr)
• BBE 4355 - Design of Wood Structures (3.0 cr)
• BBE 4401 - Bioproducts Separation and Purification Processes (3.0 cr)
• BBE 4404 - Biopolymers and BioComposites Engineering (3.0 cr)
• BBE 4523 - Ecological Engineering Design (3.0 cr)
• BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
• BBE 4535 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
• BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
• BBE 4713 - Biological Process Engineering (3.0 cr)
• BBE 4723 - Food Process Engineering (3.0 cr)
• BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• BBE 4743 - Nanobioengineering & Nanobiotechnology (3.0 cr)
• BBE 4744 - Engineering Principles for Biological Scientists (4.0 cr)
• BBE 4753 - Air Quality and Pollution Control Engineering (3.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOC 4331</td>
<td>Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)</td>
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<tr>
<td>BIOC 4332</td>
<td>Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)</td>
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<td>BIOC 4351</td>
<td>Protein Engineering (3.0 cr)</td>
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<td>BIOC 4521</td>
<td>Introduction to Physical Biochemistry (3.0 cr)</td>
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<td>BIOC 5309</td>
<td>Biocatalysis and Biodegradation (3.0 cr)</td>
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<td>BIOC 5352</td>
<td>Biotechnology and Bioengineering for Biochemists (3.0 cr)</td>
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<td>BIOC 5361</td>
<td>Microbial Genomics and Bioinformatics (3.0 cr)</td>
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<td>BIOC 5527</td>
<td>Introduction to Modern Structural Biology (4.0 cr)</td>
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<td>BIOC 5528</td>
<td>Spectroscopy and Kinetics (4.0 cr)</td>
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<td>BIOL 3004</td>
<td>Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)</td>
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<td>BIOL 3025</td>
<td>Molecular Biology and Society [TS] (3.0 cr)</td>
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<td>BIOL 3209</td>
<td>Understanding the Evolution-Creationism Controversy [CIV] (3.0 cr)</td>
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<td>BIOL 3211</td>
<td>Physiology of Humans and Other Animals (3.0 cr)</td>
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<td>BIOL 3272</td>
<td>Applied Biostatistics (4.0 cr)</td>
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<td>BIOL 3905</td>
<td>Beyond the Nobel Prize: Examining the Evolution of Swedish Innovation [GP] (3.0 cr)</td>
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<td>BIOL 4003</td>
<td>Genetics (3.0 cr)</td>
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<td>BIOL 4004</td>
<td>Cell Biology (3.0 cr)</td>
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<td>BIOL 5309</td>
<td>Molecular Ecology And Ecological Genomics (3.0 cr)</td>
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<td>CHEN 3005</td>
<td>Transport Phenomena: Momentum and Heat (4.0 cr)</td>
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<td>Chemical Engineering Thermodynamics (4.0 cr)</td>
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<td>Reaction Kinetics and Reactor Engineering (4.0 cr)</td>
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<td>Numerical methods in ChEn applications (3.0 cr)</td>
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<td>CHEN 3701</td>
<td>Introduction to Biomolecular Engineering (3.0 cr)</td>
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<td>CHEN 4501W</td>
<td>Chemical Engineering Design [WI] (4.0 cr)</td>
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<td>CHEN 4601</td>
<td>Process Control (3.0 cr)</td>
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<td>CHEN 4701</td>
<td>Applied Math (3.0 cr)</td>
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<td>CHEN 4704</td>
<td>Advanced Undergraduate Physical Rate Processes I: Transport (3.0 cr)</td>
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<td>CHEN 4707</td>
<td>Advanced Undergraduate Statistical Thermodynamics and Kinetics (3.0 cr)</td>
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<tr>
<td>CHEN 4708</td>
<td>Advanced Undergraduate Chemical Rate Processes: Analysis of Chemical Reactors (3.0 cr)</td>
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<td>CHEN 5751</td>
<td>Biochemical Engineering (3.0 cr)</td>
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<td>GCD 3022</td>
<td>Genetics (3.0 cr)</td>
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<td>GCD 3033</td>
<td>Principles of Cell Biology (3.0 cr)</td>
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<td>GCD 3485</td>
<td>Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)</td>
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<td>GCD 3486</td>
<td>Personal Genome Analysis (4.0 cr)</td>
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<td>GCD 4025</td>
<td>Cell Biology, Development &amp; Regeneration Laboratory (3.0 cr)</td>
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<td>GCD 4034</td>
<td>Molecular Genetics and Genomics (3.0 cr)</td>
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<td>Endocrinology (3.0 cr)</td>
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<td>GCD 4143</td>
<td>Human Genetics and Genomics (3.0 cr)</td>
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<td>Molecular Biology of Cancer (3.0 cr)</td>
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<td>GCD 4161</td>
<td>Developmental Biology (3.0 cr)</td>
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<td>GCD 4171</td>
<td>Stem Cells in Biology and Medicine (3.0 cr)</td>
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<td>GCD 5036</td>
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<td>Honors Calculus IV: Advanced Placement (5.0 cr)</td>
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<td>MATH 3592H</td>
<td>Honors Mathematics I (5.0 cr)</td>
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<td>Honors Mathematics II (5.0 cr)</td>
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<td>MATH 4065</td>
<td>Theory of Interest (4.0 cr)</td>
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<td>MATH 4512</td>
<td>Differential Equations with Applications (3.0 cr)</td>
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<td>Applied Fourier Analysis (4.0 cr)</td>
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<td>Elementary Probability (4.0 cr)</td>
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<td>MATH 4707</td>
<td>Introduction to Combinatorics and Graph Theory (4.0 cr)</td>
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<td>Actuarial Mathematics I (4.0 cr)</td>
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<td>MATH 5075</td>
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<td>MATH 5251</td>
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<td>MATH 5345H</td>
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<td>Differential Geometry</td>
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<td>Mathematical Analysis of Biological Networks</td>
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<td>MATH 5447</td>
<td>Theoretical Neuroscience</td>
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<td>Introduction to the Mathematics of Image and Data Analysis</td>
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<td>MATH 5525</td>
<td>Introduction to Ordinary Differential Equations</td>
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<td>MATH 5535</td>
<td>Dynamical Systems and Chaos</td>
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<td>MATH 5583</td>
<td>Complex Analysis</td>
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<td>MATH 5587</td>
<td>Elementary Partial Differential Equations I</td>
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<td>MATH 5588</td>
<td>Elementary Partial Differential Equations II</td>
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<td>MATH 5652</td>
<td>Introduction to Stochastic Processes</td>
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<td>MATH 5654</td>
<td>Prediction and Filtering</td>
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<td>MATH 5705</td>
<td>Enumerative Combinatorics</td>
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<td>Graph Theory and Non-enumerative Combinatorics</td>
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<td>Linear Programming and Combinatorial Optimization</td>
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<td>MATS 3001</td>
<td>Thermodynamics of Materials</td>
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<tr>
<td>MATS 3002</td>
<td>Mass Transport and Kinetics</td>
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<tr>
<td>MATS 3011</td>
<td>Introduction to Materials Science and Engineering</td>
<td>3.0 cr</td>
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<tr>
<td>MATS 3012</td>
<td>Metals and Alloys</td>
<td>3.0 cr</td>
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<td>MATS 3013</td>
<td>Electrical and Magnetic Properties of Materials</td>
<td>3.0 cr</td>
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<td>MATS 3141</td>
<td>Numerical Methods for Materials Science</td>
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<td>Structural Characterization Lab</td>
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<td>MATS 3851W</td>
<td>Materials Properties Lab [WI]</td>
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<td>MATS 4212</td>
<td>Ceramics</td>
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<td>MATS 4221</td>
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<td>Materials Processing [WI]</td>
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<td>Introduction to Cosmology</td>
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<td>Mathematical Methods for Physicists</td>
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<td>Modern Physics Laboratory [WI]</td>
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<td>Electricity and Magnetism</td>
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<td>Methods of Experimental Physics I</td>
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<td>Methods of Experimental Physics II [WI]</td>
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<td>Quantum Mechanics</td>
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<td>PHYS 4201</td>
<td>Statistical and Thermal Physics</td>
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<td>PHYS 4211</td>
<td>Introduction to Solid-State Physics</td>
<td>3.0 cr</td>
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<td>PHYS 4303</td>
<td>Electrodynamics and Waves</td>
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<tr>
<td>PHYS 4511</td>
<td>Introduction to Nuclear and Particle Physics</td>
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<td>PHYS 4611</td>
<td>Introduction to Space Physics</td>
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<td>PHYS 4621</td>
<td>Introduction to Plasma Physics</td>
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<td>PHYS 4811</td>
<td>Introduction to General Relativity</td>
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<td>PHYS 4911</td>
<td>Introduction to Biopolymer Physics</td>
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<td>PHYS 5001</td>
<td>Quantum Mechanics I</td>
<td>4.0 cr</td>
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<td>PHYS 5011</td>
<td>Classical Physics I</td>
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<td>Classical Physics II</td>
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<td>PHYS 5041</td>
<td>Mathematical Methods for Physics</td>
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<td>PHYS 5071</td>
<td>Physics for High School Teachers: Experimental Foundations and Historical Perspectives</td>
<td>3.0 cr</td>
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<td>PHYS 5701</td>
<td>Solid-State Physics for Engineers and Scientists</td>
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<td>Basic Concepts in Personal and Community Health</td>
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<td>PUBH 3102</td>
<td>Issues in Environmental and Occupational Health</td>
<td>3.0 cr</td>
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<tr>
<td>PUBH 3415</td>
<td>Introduction to Clinical Trials - Online</td>
<td>3.0 cr</td>
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<td>PUBH 3801</td>
<td>Health Economics and Policy</td>
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<td>PUBH 4010</td>
<td>Summer Institute in Biostatistics</td>
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<td>Introduction to Statistical Analysis [MATH]</td>
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<td>STAT 3021</td>
<td>Introduction to Probability and Statistics</td>
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<td>STAT 3022</td>
<td>Data Analysis</td>
<td>4.0 cr</td>
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<td>STAT 3032</td>
<td>Regression and Correlated Data</td>
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<td>STAT 3301</td>
<td>Regression and Statistical Computing</td>
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• STAT 3701 - Introduction to Statistical Computing (4.0 cr)
• STAT 4051 - Applied Statistics I (4.0 cr)
• STAT 4052 - Introduction to Statistical Learning (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)
• STAT 5021 - Statistical Analysis (4.0 cr)
• STAT 5102 - Theory of Statistics II (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5511 - Time Series Analysis (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• STAT 5841 - Computational Methods in the Physical Sciences (4.0 cr)
or PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
• AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
or PHYS 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
• BIOL 3021 - Biochemistry (3.0 cr)
or BIOL 3022 - Biochemistry for Life Scientists (3.0 cr)
• BIOL 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
or BIOL 4185 - Laboratory in Molecular Genetics (3.0 cr)
• BIOL 5444 - Muscle (3.0 cr)
or PHSL 5444 - Muscle (3.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
or GCD 4005W - Cell Biology-Writing Intensive [WI] (4.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
or CHEN 5753 - Advanced Biomedical Transport Processes (3.0 cr)
• CHEM 5531 - Electrochemical Engineering and Renewable Energy (3.0 cr)
or MATH 5531 - Electrochemical Engineering (3.0 cr)
• CHEM 5771 - Colloids and Dispersions (3.0 cr)
or MATH 5771 - Colloids and Dispersions (3.0 cr)
• EE 4623 - Introduction to Modern Optics (3.0 cr)
or PHYS 4623 - Introduction to Modern Optics (3.0 cr)
• HSCI 4121W - History of 20th-Century Physics [WI] (3.0 cr)
or PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• MATH 4152 - Elementary Mathematical Logic (3.0 cr)
or MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CHEM 4111W - Modern Instrumental Methods of Chemical Analysis Lab [WI] (2.0 cr)
• CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
• CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
• CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
• CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
• CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
• CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
Twin Cities Campus
Chemistry Minor
Chemistry
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 16

Chemistry probes the fundamental concepts of nature and helps us understand the world around us. It deals with all substances at the molecular level: their composition, their properties, and how they are transformed into new substances. Chemistry is a central science of great importance to society. It provides a broad range of opportunities in many specialized fields, including biotechnology, polymer chemistry, environmental chemistry, materials chemistry, and medicine.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
At least 5 credits (2 courses) must be completed at the University of Minnesota Twin Cities campus.

Students may receive no more than one degree from the Department of Chemistry: a BA or a BS or a minor.

Organic Chemistry
Take exactly 3 course(s) totaling 10 - 11 credit(s) from the following:
• CHEM 2301 - Organic Chemistry I (3.0 cr)
  or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
  or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
  or CHEM 2312H - Honors Organic Lab (5.0 cr)

Electives
Credits from seminars or special topics courses may not be applied toward the minor.
Take 5 or more credit(s) from the following:

Chemistry Electives
Take 0 or more credit(s) from the following:
• CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
• CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 cr)
• CHEM 2121 - Process Analytical Chemistry (3.0 cr)
• CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
• CHEM 4011 - Mechanisms of Chemical Reactions (3.0 cr)
• CHEM 4021 - Computational Chemistry (3.0 cr)
• CHEM 4066 - Chemistry of Industry (3.0 cr)
• CHEM 4101 - Modern Instrumental Methods of Chemical Analysis (3.0 cr)
• CHEM 4111W - Modern Instrumental Methods of Chemical Analysis Lab [WI] (2.0 cr)
• CHEM 4201 - Materials Chemistry (3.0 cr)
• CHEM 4221 - Introduction to Polymer Chemistry (3.0 cr)
• CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
• CHEM 4321 - Organic Synthesis (3.0 cr)
• CHEM 4322 - Advanced Organic Chemistry (3.0 cr)
• CHEM 4352 - Physical Organic Chemistry (3.0 cr)
• CHEM 4361 - Interpretation of Organic Spectra (3.0 cr)
• CHEM 4411 - Introduction to Chemical Biology (3.0 cr)
• CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
• CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
• CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
• CHEM 4601 - Green Chemistry [ENV] (3.0 cr)
• CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
• CHEM 4715 - Physical Inorganic Chemistry (3.0 cr)
• CHEM 4725 - Organometallic Chemistry (3.0 cr)
• CHEM 4735 - Bioinorganic Chemistry (3.0 cr)
• CHEM 4745 - Advanced Inorganic Chemistry (3.0 cr)
• CHEM 5210 - Materials Characterization (4.0 cr)
• CHEM 5245 - Introduction to Drug Design (3.0 cr)
• CHEM 4214 - Polymers (3.0 cr)
  or CHEN 4214 - Polymers (3.0 cr)
  or MATS 4214 - Polymers (3.0 cr)
• CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
  or CHEN 4223W - Polymer Laboratory [WI] (2.0 cr)
  or MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
• CHEM 4301 - Applied Surface and Colloid Science (3.0 cr)
  or BBE 4301 - Applied Surface and Colloid Science (3.0 cr)

**Directed Study**
Take at most 2 credit(s) from the following:
• CHEM 2094 - Directed Research (1.0 - 3.0 cr)
• CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
Twin Cities Campus
Chicano-Latino Studies B.A.
Chicano & Latino Studies
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 36 to 37
• Degree: Bachelor of Arts

The program’s curriculum explores the dimensions of race, ethnicity, culture and identity, gender, and class in the United States, both historically and in contemporary times. Chicano-Latino studies majors take courses offered in two broadly defined fields of study, humanities and social science. Humanities content includes courses designed to increase awareness of Chicana/o culture, as well as intellectual, aesthetic, literary, historical, ethical, and human values. Social science content includes courses that analyze social institutions and how they affect the individual, as well as emphasize contemporary Chicana/o issues as they relate to the larger society. Areas of study include political science, anthropology, economics, sociology, and history. The bachelor of arts degree in Chicano-Latino studies is designed to meet the needs of students preparing for careers serving Chicana/o-Latina/o constituencies and to prepare students for graduate and advanced professional study in programs in which a minority affairs focus would be an asset. The program allows students the flexibility of pursuing work in related fields, such as Latin American studies, Spanish studies, Women's studies, and American studies. Double-majors are encouraged.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of Spanish (preferred).

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Chicano-Latino Studies BA is CHIC.

Students should confer with faculty and their major advisor to select courses intended to meet their professional goals and intellectual interests. With prior approval from the department chair, up to 9 upper-division credits of coursework (approximately 3 courses) not on the electives list but related to the discipline may count towards the electives requirement. CHIC 1112 is foundational and should be completed during the first or second year. 3xxx-level courses offer more focused opportunities to examine history, society, culture, literature, and gender. Majors must also complete a senior paper.

A given course may only count towards one major requirement.

Students may earn a BA and a minor in Chicano-Latino studies, but not both.

At least 13 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First Year Experience course sequence.

Core Courses
Take exactly 5 course(s) totaling 15 or more credit(s) from the following:

Introduction to Chicana/o Studies
Take 1 or more course(s) from the following:

- **CHIC 1112** - Paradigms in Chicana/o Studies [DSJ] (3.0 cr)

**Community and Advocacy**

Take 1 or more course(s) from the following:

- **CHIC 1275** - Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)
- **CHIC 3275** - Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)
- **CHIC 3374** - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- **CHIC 5374** - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)

**Chicana Studies**

Take 1 or more course(s) from the following:

- **CHIC 3212** - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
- **GWSS 3410** - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)

**Music, Art and Literature**

Take 1 or more course(s) from the following:

- **CHIC 3213** [Inactive] [AH, DSJ] (3.0 cr)
- **CHIC 3507W** - Introduction to Chicano/a Literature [LITR, DSJ, WI] (3.0 cr)
- **ENGL 3507W** - Introduction to Chicano/a Literature [LITR, DSJ, WI] (3.0 cr)

**History**

Take 1 or more course(s) from the following:

- **CHIC 3444** - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
- **GLOS 3634** [Inactive] [HIS, DSJ] (3.0 cr)
- **HIST 3444** - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
- **CHIC 3446** - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
  or **HIST 3446** - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)

**Electives**

With prior approval from the department chair, up to 9 upper-division credits of coursework not on the Electives list but related to the discipline may count towards the Electives requirement.

Take 18 or more credit(s) from the following:

**1xxx-level Electives**

Take at most 3 credit(s) from the following:

- **CHIC 1102** - Latinos in the United States: Culture and Citizenship [HIS, DSJ] (3.0 cr)
  or **CHIC 1102H** - Honors: Latinos in the United States: Culture and Citizenship [HIS, DSJ] (3.0 cr)
- **CHIC 1275** - Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)

**Upper-division Electives**

Take 15 - 18 credit(s) from the following:

- **CHIC 3213** [Inactive] [AH, DSJ] (3.0 cr)
- **CHIC 3221** - Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)
- **CHIC 3223** - Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
- **CHIC 3275** - Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)
- **CHIC 3352** - Transborder Theory: Global Views/Borderland Spaces (3.0 cr)
- **CHIC 3375** - Folktale of Greater Mexico [DSJ] (3.0 cr)
- **CHIC 3452** - Chicana/x/LatinX Indigeneity [DSJ] (3.0 cr)
- **CHIC 3672** - Chicana/o Experience in the Midwest [DSJ] (3.0 cr)
- **CHIC 3771** - Latino Social Power and Social Movements in the U.S. (3.0 cr)
- **CHIC 3888** - Immigration and the U.S. Latina/o Experience: Diaspora, Identity, and Community [HIS, DSJ] (3.0 cr)
- **CHIC 3900** - Topics in Chicana/o Studies (3.0 cr)
- **CHIC 3993** - Directed Studies (1.0 - 9.0 cr)
- **CHIC 4275** - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
- **CHIC 5374** - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
  or **CHIC 5374** - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- **CHIC 3412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or **AMST 5412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or **ANTH 5412** - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or **GWSS 3515** - Comparative Indigenous Feminisms [GP] (3.0 cr)
- **CHIC 3423** - Central American Revolutions (3.0 cr)
  or **HIST 3423** - Central American Revolutions (3.0 cr)
Capstone
Capstone projects are typically papers that engage with theories, concepts, and scholarship within the fields of Chican@ and Latin@ Studies and result in original research. Alternative projects are allowed, however, all projects must include a written component to illustrate proficiency in writing, and public presentation. We will cover a variety of topics including interdisciplinarity, methodology, research positionality, and essay composition. Students who double major in CLA and choose to complete the capstone requirement in their other major may waive the Chicano-Latino Studies capstone, and they do not need to replace the 3 credits.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CHIC 4901W - Senior Paper [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CHIC 4901W - Senior Paper [WI] (3.0 cr)
• CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
  or ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
• CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
Twin Cities Campus
Chicano-Latino Studies Minor
Chicano & Latino Studies
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 18

The program focuses on the social, historical, and cultural experience of the Mexican and Latino populations in the United States. Courses in the curriculum examine the culture, literature, and history of Chicana/os and Latina/os in the United States.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in Chicano-Latino studies, but not both.

Minor Requirements
Take 18 or more credit(s) from the following:

- CHIC 3213 [Inactive] [AH, DSJ] (3.0 cr)
- CHIC 3221 - Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)
- CHIC 3223 - Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
- CHIC 3275 - Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)
- CHIC 3352 - Transborder Theory: Global Views/Borderland Spaces (3.0 cr)
- CHIC 3375 - Folklore of Greater Mexico [DSJ] (3.0 cr)
- CHIC 3452 - Chicana/LatinX Indigenousity [DSJ] (3.0 cr)
- CHIC 3672 - Chicana/o Experience in the Midwest [DSJ] (3.0 cr)
- CHIC 3771 - Latino Social Power and Social Movements in the U.S. (3.0 cr)
- CHIC 3888 - Immigration and the U.S. Latina/o Experience: Diaspora, Identity, and Community [HIS, DSJ] (3.0 cr)
- CHIC 4275 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
- CHIC 3212 - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
  or GWSS 3410 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
- CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
  or ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
- CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
  or CHIC 5374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
- AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
- AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
- CHIC 3423 - Central American Revolutions (3.0 cr)
  or HIST 3423 - Central American Revolutions (3.0 cr)
- CHIC 3425 - History of Modern Mexico (3.0 cr)
  or HIST 3425 - History of Modern Mexico (3.0 cr)
- CHIC 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
  or QLOS 3634 [Inactive] [HIS, DSJ] (3.0 cr)
  or HIST 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
- CHIC 3446 - Chicana and Chicano History II: WWll, El Movimiento, and The New Millennium [HIS, DSJ] (3.0 cr)
  or HIST 3446 - Chicana and Chicano History II: WWll, El Movimiento, and The New Millennium [HIS, DSJ] (3.0 cr)
- CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
- CHIC 3752 [Inactive] [DSJ] (3.0 cr)
  or AMST 3752 [Inactive] [DSJ] (3.0 cr)
- CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
  or POL 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
  or AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
  or HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
• CHIC 3900 - Topics in Chicano Studies (3.0 cr)
  or CHIC 5920 - Topics in Chicana(o) Studies (3.0 cr)
• CHIC 3931 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
• CHIC 4232 - Chicana/o - Latina/o Gender and Sexuality Studies [AH, DSJ] (3.0 cr)
  or GLBT 4232 [Inactive][AH, DSJ] (3.0 cr)
• CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
  or GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
• Directed Studies
  Take at most 9 credit(s) from the following:
  • CHIC 3993 - Directed Studies (1.0 - 9.0 cr)
  • CHIC 5993 - Directed Studies (1.0 - 3.0 cr)
Twin Cities Campus

Chinese Language Advanced-Level Certificate
Asian and Middle Eastern Studies
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 20 to 50
- Study Abroad for an intensive summer or one-semester program in China or Taiwan, approved by the Director of Language Instruction (DLI) of the Chinese program.

Recommended programs are CET in Beijing and the International Chinese Language Program (ICLP) in Taiwan because these are two programs that have a direct affiliation with the university and have been approved for UMN direct credit. Other programs could be used if they meet the departments standard and University criteria.

In special cases other language experience in a native-speaking environment could substitute, with approval of the DLI.

Degree: Advanced Chinese Certificate

The purpose of the Certificate is to recognize students who have reached an advanced level of proficiency in Modern Standard Chinese (ACTFL Advanced, ILR 2), along with training in literary Chinese and cultural literacy. Designated as a “tier four” language by the Foreign Service Institute, Chinese is acknowledged as one of the most difficult languages to master. Students who receive the certificate will have official recognition of this advanced level of proficiency in Chinese which can facilitate their post-college careers.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite Courses
In select cases, students with advanced proficiency may be exempt from taking one or many of these courses. Placement is determined by the Director of Chinese Language Instruction.
Take 0 - 6 course(s) totaling 0 - 30 credit(s) from the following:
- CHN 1011 - Beginning Modern Chinese I (5.0 cr)
- CHN 1012 - Beginning Modern Chinese II (5.0 cr)
- or CHN 1015 - Accelerated Beginning Modern Chinese (5.0 cr)
- CHN 3021 - Intermediate Modern Chinese I (5.0 cr)
- CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
- or CHN 3016 - Accelerated Intermediate Modern Chinese (5.0 cr)
- CHN 3031 - Advanced Modern Chinese I (4.0 cr)
- CHN 3032 - Advanced Modern Chinese II (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of Modern Chinese.

Advanced Readings in Modern Chinese
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- CHN 4041 - Advanced Readings in Modern Chinese I (4.0 cr)
- CHN 4042 - Advanced Readings in Modern Chinese II (4.0 cr)
Literary Chinese
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- CHN 5211 - Introductory Classical Chinese I (3.0 cr)
  or JPN 5211 - Introductory Classical Chinese I (3.0 cr)
  or KOR 5211 - Introductory Classical Chinese I (3.0 cr)
- CHN 5212 - Introductory Classical Chinese II (3.0 cr)
  or JPN 5212 - Introductory Classical Chinese II (3.0 cr)
  or KOR 5212 - Introductory Classical Chinese II (3.0 cr)
- CHN 5213 - Literary Chinese in the Analects (3.0 cr)

Chinese Culture, History, and Literature
Other courses that introduce students to broad cultures of modern China and its cultures may be accepted with departmental approval. ALL 3920 may count towards the certificate when the topic is related to China.
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- AMES 3336 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)
- AMES 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
- AMES 3351 - Martial Arts in Chinese Literature and Film (3.0 cr)
- AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
- AMES 3357 - Taiwan Film (3.0 cr)
- AMES 3362 - Women Writers in Chinese History (3.0 cr)
- AMES 3351 - Chinese New Media (3.0 cr)
- AMES 3359 - Early Shanghai Film Culture (3.0 cr)
- AMES 3374 - The Monkey King and Transcultural China: Chinese Myth, Legend, and Ideology (3.0 cr)
- AMES 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
  or HIST 3466 - Religion and Society in Imperial China [HIS] (3.0 cr)
  or RELS 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
- AMES 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
  or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)

Study Abroad
Study Abroad for an intensive summer or one-semester program in mainland China or Taiwan, approved by the Academic Advisor of ALL (Asian Languages and Literatures).

Recommended programs
The following programs are recommended because the university is affiliated with them, and they have been approved for UMN direct credit. Other programs could be used if they meet the department's standard and University criteria.
- CET in Beijing
- International Chinese Language Program in Taiwan

Self-assessment
Self-assessment to confirm student commitment and readiness to proceed to ACTFL testing. This will be conducted in two parts: a written self-assessment (in English), followed by an interview (in Chinese) with the DLI and one other member of the Chinese faculty.

Chinese Essay regarding Chinese language study and the student's professional career goals
1,000 computer-generated characters, with revision. Students engage with contemporary issues and their relationship to their profession. Students will be expected to include original sources in their essay, depending on their major and professional field of interest. The essay will be evaluated by one member of the Chinese faculty. Students will be allowed a second submission, if needed.

Achieve Advanced-Low or Higher on the Chinese ACTFL
In order to complete your certificate, you must achieve a rating of Advanced-Low or higher in 3 skills.

Additional Recommended Experiences to Increase Chinese-Language Proficiency
- Tandem Plus
- Media Discussion (sponsored by the Chinese Flagship program)
- Conversation and Chinese cultural activities
- Chinese speaking community service
- Chinese student group activities
Twin Cities Campus
Classical Civilization Minor
Classical & Near Eastern Studies
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 18 to 29

The minor in Classical Civilization introduces students not only to the languages and cultures of ancient Greece and Rome but also to the influence of these cultures on later civilizations. This minor may complement a student's intended major study, especially in history, religious studies, art history, architecture, English, French, Spanish, German, Italian, and theatre arts.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 3 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introductory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- CNES 1002 - World of Greece [HIS] (3.0 cr)
- CNES 1003 - World of Rome [HIS] (3.0 cr)
- CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
  or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)

First-Year Greek or Latin
In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Director of Classical Language Instruction.
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- GRK 1001 - Beginning Classical Greek I (5.0 cr)
- GRK 1002 - Beginning Classical Greek II (5.0 cr)
  or LAT 1001 - Beginning Latin I (5.0 cr)
- LAT 1002 - Beginning Latin II (5.0 cr)

Minor Requirements
Students may earn a BA in Classics or a minor in classical civilization, but not both.

Electives
Take exactly 5 course(s) totaling 15 or more credit(s) including 3 or more sub-requirements(s) from the following:

Language and Literature
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- ENGL 3007 - Shakespeare [LITR] (3.0 cr)
- ENGL 3132 - The King James Bible as Literature (3.0 cr)
- ENGL 3141 - The Restoration and the Eighteenth Century: Sex, Satire, and Sentiment (3.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- GRK 5701 - Prose Composition (3.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- LAT 5701 - Latin Prose Composition (3.0 cr)
• LAT 5703 - Epigraphy (3.0 cr)

• Art and Material Culture
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 3221 - Field School (6.0 cr)
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• FRIT 3600 - The Renaissance (3.0 cr)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

• History, Philosophy, and Religion
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3601W - Sexuality and Gender in Ancient Greece and Rome [AH, WI] (3.0 cr)
• HIST 3052 - Ancient Civilization: Greece (3.0 cr)
• HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
• HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
or HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• RELS 3609 - Medieval Art [AH] (3.0 cr)
or ARTH 3009 - Medieval Art [AH] (3.0 cr)
or MEST 3009 - Medieval Art [AH] (3.0 cr)
Twin Cities Campus
Classics B.A.
Classical & Near Eastern Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 to 65
- Degree: Bachelor of Arts

The field of classics encompasses the study of ancient Greek and Roman cultures and their political, social, artistic, and intellectual legacies. With its broadly conceived chronological (the Bronze age through late antiquity) and geographical (ancient Mediterranean and Near East) boundaries, the Classics program involves the study of cultural contact and hybridization, as well as the exploration of the dynamic relationships between past and present. With its wide range of courses in language, literature, religion, social and political history, as well as art and archaeology, the program enables students to investigate ancient cultures from different perspectives and become acquainted with the aims and methods of several disciplines. Four degree sub-plans (Greek; Latin; Greek and Latin; Classical Civilization) are designed to accommodate students' specific interests and needs.

Greek is the Western language with the longest continuous history, from the poetry of Homer in the first millennium BCE to the present. The Greek sub-plan focuses on literature, philosophy, religion, archaeology, and art associated with the Greek language from its earliest appearance through the rise of the Greek city-state in the 5th century BCE and into the Roman Empire.

The Latin sub-plan allows students to explore a large range of literature written over more than a millennium and a half. It is concerned with the language and literature of the Roman Republic and Empire and later Latin literature from the Middle Ages to the Renaissance, as well as with Roman religion, history, archaeology, and art. Modern "Romance" languages (French, Italian, Spanish, and Portuguese) are derived from Latin.

The Greek and Latin sub-plan offers the most comprehensive and comparative approach to Greco-Roman antiquity with its broad focus on the languages and literature of both ancient Greece and Rome. Students explore a wide range of ancient texts and gain a heightened awareness of inter-cultural appropriation and interpretation. Majors interested in graduate work in classics are encouraged to consider this sub-plan as it offers especially strong preparation for advanced academic training in the field.

The Classical Civilization sub-plan offers students the opportunity to explore the art, literature, religion, and social and political history of ancient Greece and Rome from interdisciplinary perspectives with less required work in the ancient languages. This sub-plan is also an attractive option as a double major for students studying in fields engaged with the reception of the classical past, like English, Art History, French, Italian, German, History, and Philosophy.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Refer to your chosen sub-plan for more information on what preparatory courses you must complete.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Classics BA is CNES.
No course may be used to fulfill more than one major requirement.

At least 18 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**CNES Core Courses**

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- **CNES 3081W** - Classical Epic in Translation [LITR, WI] (3.0 cr)
- **CNES 3082W** - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- **CNES 3103** - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- **CNES 3104** [Inactive] (3.0 cr)
- **CNES 3105** [Inactive] (3.0 cr)
- **CNES 3106** - Ancient Rome: The Age of Nero (3.0 cr)
- **CNES 3601** - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
- **CNES 3071** - Greek and Hellenistic Religions [HIS] (3.0 cr)
  - or **CNES 5071** - Greek and Hellenistic Religions (3.0 cr)
- **CNES 3072** - The Birth of Christianity [AH] (3.0 cr)
  - or **CNES 5072** - The Birth of Christianity (3.0 cr)
- **CNES 3201** - The Bible: Context and Interpretation [LITR] (3.0 cr)
  - or **JWST 3201** - The Bible: Context and Interpretation [LITR] (3.0 cr)
- **CNES 3204** [Inactive] (3.0 cr)
  - or **CNES 5204** - The Dead Sea Scrolls (3.0 cr)
  - or **RELS 3204** [Inactive] (3.0 cr)
  - or **RELS 5204** - The Dead Sea Scrolls (3.0 cr)
- **CNES 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
  - or **CNES 5502** - Ancient Israel: From Conquest to Exile (3.0 cr)
  - or **HIST 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
  - or **JWST 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
- **CNES 3535** - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  - or **RELS 3535** - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  - or **RELS 5535** - Death and the Afterlife in the Ancient World [AH] (3.0 cr)

**Capstone**

Students conduct independent research under a faculty member and produce a substantial, original research paper. Using documents or primary sources along with secondary sources, students show their mastery of disciplinary methodologies and their knowledge and understanding of ancient sources and modern scholarship related to their chosen topic.

Students who double major and choose to complete the capstone requirement in their other major may waive the Classics BA capstone, but they do need to replace the 4 credits with another upper-division CNES elective.

- **CNES 3951W** - Capstone [WI] (4.0 cr)

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- **CNES 3081W** - Classical Epic in Translation [LITR, WI] (3.0 cr)
- **CNES 3082W** - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- **CNES 3951W** - Capstone [WI] (4.0 cr)

**Program Sub-plans**

Students are required to complete one of the following sub-plans.
Classical Civilization
Depending on a student's language placement, the Classical Civilization track requires 36-50 total credits of coursework, including 9 credits of core courses and the capstone.

Introductory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- CNES 1002 - World of Greece [HIS] (3.0 cr)
- CNES 1003 - World of Rome [HIS] (3.0 cr)
- CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
  or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
- Other intro course may be taken with DUS approval.

Preparatory Greek or Latin
Take either the Latin or Greek 3-course language sequence for 14 credits. In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Greek and Latin Language Coordinators.
Take 0 - 3 course(s) totaling 0 - 14 credit(s) from the following:
- GRK 1001 - Beginning Classical Greek I (5.0 cr)
- GRK 1002 - Beginning Classical Greek II (5.0 cr)
- GRK 3003 - Intermediate Greek Prose (4.0 cr)
  or LAT 1001 - Beginning Latin I (5.0 cr)
- LAT 1002 - Beginning Latin II (5.0 cr)
- LAT 3003 - Intermediate Latin Prose (4.0 cr)

Intermediate Greek or Latin Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- GRK 3004 - Intermediate Greek Poetry (4.0 cr)
  or LAT 3004 - Intermediate Latin Poetry (4.0 cr)

Electives
Take at least 5 courses totaling 15 credits, including at least one 3-credit course from each of the following content areas: (1) Language and Literature, (2) Art and Material Culture, (3) History, Philosophy and Religion. Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take exactly 5 course(s) totaling 15 or more credit(s) including 3 or more sub-requirements(s) from the following:

Language and Literature
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 3104 [Inactive] (3.0 cr)
- CNES 3105 [Inactive] (3.0 cr)
- CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- ENGL 3007 - Shakespeare [LITR] (3.0 cr)
- ENGL 3132 - The King James Bible as Literature (3.0 cr)
- ENGL 3133 [Inactive] (3.0 cr)
- ENGL 3134 [Inactive] (3.0 cr)
- ENGL 3141 - The Restoration and the Eighteenth Century: Sex, Satire, and Sentiment (3.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- GRK 5701 - Prose Composition (3.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- LAT 5701 - Latin Prose Composition (3.0 cr)
- LAT 5703 - Epigraphy (3.0 cr)
- CNES 3108 [Inactive] (3.0 cr)
  or RELS 3541 [Inactive] (3.0 cr)
- GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Art and Material Culture
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ANTH 3221 - Field School (6.0 cr)
- ANTH 5442 - Archaeology of the British Isles (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- FRIT 3600 - The Renaissance (3.0 cr)
- ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
•CNES 3108 (Inactive)(3.0 cr)
or RELS 3541 (Inactive)(3.0 cr)
•CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
•ARTH 3162 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or CNES 3162 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3162 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
•ARTH 5115 (Inactive)(3.0 cr)
or CNES 5185 (Inactive)(3.0 cr)
•ARTH 5192 (Inactive)(3.0 cr)
or CNES 5192 (Inactive)(3.0 cr)

•History, Philosophy and Religion
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
•CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
•CNES 3104 (Inactive)(3.0 cr)
•CNES 3105 (Inactive)(3.0 cr)
•CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
•CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
•HIST 3052 - Ancient Civilization: Greece (3.0 cr)
•HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
•HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
•CNES 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
or HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
•CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
•CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
•CNES 3108 (Inactive)(3.0 cr)
or RELS 3541 (Inactive)(3.0 cr)
•CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or CNES 5013 (Inactive)(3.0 cr)
or LAW 6029 (Inactive)(3.0 cr)

Greek
Depending on a student's language placement, the Greek track requires 36-50 total credits of coursework, including 9 credits of core courses and the capstone.

Introductory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
•CNES 1002 - World of Greece [HIS] (3.0 cr)
•CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
•Other intro course may be taken with DUS approval.

Preparatory Greek
In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Greek Language Coordinator.
Take 0 - 3 course(s) totaling 0 - 14 credit(s) from the following:
•GRK 1001 - Beginning Classical Greek I (5.0 cr)
•GRK 1002 - Beginning Classical Greek II (5.0 cr)
•GRK 3003 - Intermediate Greek Prose (4.0 cr)

Intermediate and Advanced Greek Courses
Take 10 or more credit(s) from the following:
•GRK 3004 - Intermediate Greek Poetry (4.0 cr)
•GRK 5100 - Advanced Reading (3.0 cr)
•GRK 5200 - Biblical Greek (3.0 cr)
•GRK 5701 - Prose Composition (3.0 cr)
•GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Electives

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Information current as of September 02, 2020
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 3104 \(\text{Inactive}\) (3.0 cr)
- CNES 3105 \(\text{Inactive}\) (3.0 cr)
- CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- GRK 5701 - Prose Composition (3.0 cr)
- HIST 3052 - Ancient Civilization: Greece (3.0 cr)
- CNES 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  - or HIST 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
- CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
- HIST 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- HIST 5071 - Greek and Hellenistic Religions (3.0 cr)
- CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
- CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
- RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
- RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
- CNES 3078 \(\text{Inactive}\) (3.0 cr)
- or RELS 3078 \(\text{Inactive}\) (3.0 cr)
- GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  - or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Greek and Latin

Depending on a student's language placement, the Latin and Greek track requires 36-65 total credits of coursework, including 9 credits of core courses and the capstone.

**Introductory Course**

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

- CNES 1002 - World of Greece [HIS] (3.0 cr)
- CNES 1003 - World of Rome [HIS] (3.0 cr)
- CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
  - or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
- Other intro course may be taken with DUS approval.

**Preparatory Greek and Latin**

In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Greek and Latin Language Coordinators.

Take 0 - 6 course(s) totaling 0 - 28 credit(s) from the following:

- GRK 1001 - Beginning Classical Greek I (5.0 cr)
- GRK 1002 - Beginning Classical Greek II (5.0 cr)
- GRK 3003 - Intermediate Greek Prose (4.0 cr)
- LAT 1001 - Beginning Latin I (5.0 cr)
- LAT 1002 - Beginning Latin II (5.0 cr)
- LAT 3003 - Intermediate Latin Prose (4.0 cr)

**Intermediate and Advanced Greek or Latin Courses**

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Information current as of September 02, 2020
Take either the Greek or Latin Emphasis sequence for a total of at least 14 credits.

**Greek Emphasis**

Take 14 or more credit(s) from the following:
- LAT 3004 - Intermediate Latin Poetry (4.0 cr)
- Take 10 or more credit(s) from the following:
  - GRK 3004 - Intermediate Greek Poetry (4.0 cr)
  - GRK 5100 - Advanced Reading (3.0 cr)
  - GRK 5200 - Biblical Greek (3.0 cr)
  - GRK 5701 - Prose Composition (3.0 cr)
- LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  - or GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

**Latin Emphasis**

Take 14 or more credit(s) from the following:
- GRK 3004 - Intermediate Greek Poetry (4.0 cr)
- Take 10 or more credit(s) from the following:
  - LAT 3004 - Intermediate Latin Poetry (4.0 cr)
  - LAT 5100 - Advanced Reading (3.0 cr)
  - LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
  - LAT 5701 - Latin Prose Composition (3.0 cr)
  - LAT 5703 - Epigraphy (3.0 cr)
  - GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  - or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

**Electives**

Courses in history, art history, medieval studies, and other departments may be used with DUS approval.

Take 6 or more credit(s) from the following:
- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- CNES 3104 [Inactive] (3.0 cr)
- CNES 3105 [Inactive] (3.0 cr)
- CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- GRK 5701 - Prose Composition (3.0 cr)
- HIST 3052 - Ancient Civilization: Greece (3.0 cr)
- HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
- HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- LAT 5701 - Latin Prose Composition (3.0 cr)
- LAT 5703 - Epigraphy (3.0 cr)
- CNES 3061 - "Bread and Circuses:“ Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  - or HIST 3061 - "Bread and Circuses:“ Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
- CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  - or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
  - or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  - or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
- CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
  - or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
  - or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
  - or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
- CNES 3108 [Inactive] (3.0 cr)
  - or RELS 3541 [Inactive] (3.0 cr)
- ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
  - or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
  - or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
- CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  - or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  - or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- CNES 3204 [Inactive] (3.0 cr)
  - or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
  - or RELS 3204 [Inactive] (3.0 cr)
  - or RELS 5204 - The Dead Sea Scrolls (3.0 cr)
• CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• CNES 5013 - Inactive (3.0 cr)
or LAW 6029 - Inactive (3.0 cr)
• GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Latin
Depending on a student's language placement, the Latin track requires 36-50 total credits of coursework, including 9 credits of core courses and the capstone.

Introductory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• CNES 1003 - World of Rome [HIS] (3.0 cr)
• CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
• Other intro course may be taken with DUS approval.

Preparatory Latin
In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Latin Language Coordinator.
Take 0 - 3 course(s) totaling 0 - 14 credit(s) from the following:
• LAT 1001 - Beginning Latin I (5.0 cr)
• LAT 1002 - Beginning Latin II (5.0 cr)
• LAT 3003 - Intermediate Latin Prose (4.0 cr)

Intermediate and Advanced Latin Courses
Take 10 or more credit(s) from the following:
• LAT 3004 - Intermediate Latin Poetry (4.0 cr)
• LAT 5100 - Advanced Reading (3.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
• LAT 5701 - Latin Prose Composition (3.0 cr)
• LAT 5703 - Epigraphy (3.0 cr)
• GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Electives
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
• CNES 3104 - Inactive (3.0 cr)
or CNES 3105 - Inactive (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
• HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
• HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
• LAT 5100 - Advanced Reading (3.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
• LAT 5701 - Latin Prose Composition (3.0 cr)
• LAT 5703 - Epigraphy (3.0 cr)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• CNES 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
or HIST 3061 - "Bread and Circuses: Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3108 - Inactive (3.0 cr)
or RELS 3541 - Inactive (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or **CNES 5502** - Ancient Israel: From Conquest to Exile (3.0 cr)
or **HIST 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
or **JWST 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)

- **CNES 3535** - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or **RELS 3535** - Death and the Afterlife in the Ancient World [AH] (3.0 cr)

- **CNES 5013** *(Inactive)* (3.0 cr)
or **LAW 6029** *(Inactive)* (3.0 cr)

- **GRK 5705** - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
or **LAT 5705** - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
Twin Cities Campus
Communication Studies B.A.
Communication Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 34
- Degree: Bachelor of Arts

This program examines human communication using humanistic and social scientific methods. Fields of study include speech writing, rhetorical criticism, ethics, interpersonal, small group, organizational, intercultural, and electronic (broadcasting, cable, satellite, internet) forms of communication. Students are strongly encouraged to declare their major during the first or second year. Students intending to declare a communication studies major must first meet with an a communication studies advisor in 274 Ford Hall.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the communication studies BA is COMM.

At least 14 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a bachelor of arts or a minor in communication studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)
- COMM 1313W - Analysis of Argument [WI] (3.0 cr)

Core Courses
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- COMM 3211 - Introduction to Media Studies (3.0 cr)
- COMM 3401 - Introduction to Communication Theory (3.0 cr)
- COMM 3601 - Introduction to Rhetorical Theory (3.0 cr)

Performative Elective
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
- COMM 3202 - Audio Production and Media Literacy (3.0 cr)
- COMM 3204 - Advanced Electronic Media Production (4.0 cr)
• COMM 3411 - Introduction to Small Group Communication (3.0 cr)
• COMM 3422 - Interviewing and Communication (3.0 cr)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• COMM 3614 - Advanced Public Policy and Debate (3.0 cr)
• Course must be taken for at least 3 credits to count toward this requirement.
  • COMM 3990 - Research Practicum (1.0 - 3.0 cr)

Research Experience Course

Students must complete COMM 1313W before enrolling in a Research Experience Course.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 3452W - Communication and the Intercultural Reentry [WI] (3.0 cr)
• COMM 3615 - Argumentation (3.0 cr)
• COMM 3635W - Famous Speeches [WI] (3.0 cr)
• COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
• COMM 3676W - Communicating Terrorism [GP, WI] (3.0 cr)
• COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
• COMM 3682W - Communicating War [AH, CIV, WI] (3.0 cr)

Communication Studies Electives

The amount of Communication Studies Electives required will depend on the amount of credits taken to fulfill the Performative Elective and Research Experience Course requirements.

Take 12 - 15 credit(s) from the following:
COMM 19xx
Take 0 - 1 course(s) totaling 0 - 3 credit(s) from the following:
  • COMM 19xx - Freshman Seminar
COMM 3xxx
Take 0 or more course(s) from the following:
  • COMM 3190H - Honors Course: Research Seminar in Communication (3.0 cr)
  • COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
  • COMM 3202 - Audio Production and Media Literacy (3.0 cr)
  • COMM 3204 - Advanced Electronic Media Production (4.0 cr)
  • COMM 3211 - Introduction to Media Studies (3.0 cr)
  • COMM 3221 - Musical Communication (3.0 cr)
  • COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
  • COMM 3341 - Asian American Images [AH, DSJ] (3.0 cr)
  • COMM 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
  • COMM 3401 - Introduction to Communication Theory (3.0 cr)
  • COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)
  • COMM 3409 - Nonverbal Communication [SOCS] (3.0 cr)
  • COMM 3411 - Introduction to Small Group Communication (3.0 cr)
  • COMM 3422 - Interviewing and Communication (3.0 cr)
  • COMM 3431 - Persuasion Theories (3.0 cr)
  • COMM 3441 - Introduction to Organizational Communication (3.0 cr)
  • COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
  • COMM 3452W - Communication and the Intercultural Reentry [WI] (3.0 cr)
  • COMM 3601 - Introduction to Rhetorical Theory (3.0 cr)
  • COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
  • COMM 3614 - Advanced Public Policy and Debate (3.0 cr)
  • COMM 3615 - Argumentation (3.0 cr)
  • COMM 3625 - Communication Ethics (3.0 cr)
  • COMM 3631 - Freedom of Speech [CIV] (3.0 cr)
  • COMM 3635W - Famous Speeches [WI] (3.0 cr)
  • COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
  • COMM 3666 - Greek Intellectual Revolution (3.0 cr)
  • COMM 3676W - Communicating Terrorism [GP, WI] (3.0 cr)
  • COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
  • COMM 3682W - Communicating War [AH, CIV, WI] (3.0 cr)
  • COMM 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
  • COMM 3110 - Topics in Communication Studies (3.0 cr)
  or COMM 3110H - Honors Topics in Communication Studies (3.0 cr)
• COMM 3341 - Asian American Images [AH, DSJ] (3.0 cr)
  or AAS 3341 - Asian American Images [AH, DSJ] (3.0 cr)
• COMM 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
  or AAS 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
• Directed Study and Research
Take 0 - 3 credit(s) from the following:
• COMM 3970 - Directed Study (1.0 - 3.0 cr)
or COMM 3980 - Directed Instruction (3.0 cr)
or COMM 3990 - Research Practicum (1.0 - 3.0 cr)
• COMM 4xxx and 5xxx
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• COMM 4204 - Producing for Television: Theory and Practice (4.0 cr)
• COMM 4235 - Electronic Media and Ethnic Minorities--A World View (3.0 cr)
• COMM 4245 - Critical Television Studies (3.0 cr)
• COMM 4263 - Feminist Media Studies [DSJ] (3.0 cr)
• COMM 4291 - New Telecommunication Media (3.0 cr)
• COMM 4404W - Language Borderlands [WI] (3.0 cr)
• COMM 4407 - Communication and Conflict (3.0 cr)
• COMM 4471 - Communication in Marriage and Family (3.0 cr)
• COMM 4602W - Contemporary Political Persuasion [WI] (3.0 cr)
• COMM 4616 - African American Civil Rights Rhetoric (3.0 cr)
• COMM 4621W - Rhetoric of Feminism [DSJ, WI] (3.0 cr)
• COMM 5110 - Special Topics in Communication Theory (3.0 cr)
• COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
• COMM 5221 - Media, Race, and Identity (3.0 cr)
• COMM 5231 - Media Outlaws (3.0 cr)
• COMM 5261 - Political Economy of Media Culture (3.0 cr)
• COMM 5401 - Advanced Theories of Communication (3.0 cr)
• COMM 5402 - Advanced Interpersonal Communication (3.0 cr)
• COMM 5411 - Small Group Communication Research (3.0 cr)
• COMM 5431 - The Process of Persuasion (3.0 cr)
• COMM 5441 - Communication in Human Organizations (3.0 cr)
• COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
• COMM 5611 - Survey of Rhetorical Theory (3.0 cr)
• COMM 5615W - Introduction to Rhetorical Criticism [WI] (3.0 cr)
• COMM 5617 - History and Criticism of U.S. Public Discourse: 1630-1865 (3.0 cr)
• COMM 5994 - Communication Research Practicum (1.0 - 3.0 cr)
• COMM 4251 - Environmental Communication [ENV] (3.0 cr)
or COMM 5250 - Environmental Communication (3.0 cr)

Capstone
The Capstone is fulfilled by completing a project. Students seeking honors in communication studies may fulfill the capstone requirement with the honors thesis. Students must complete at least one Research Experience Course and two Core Courses prior to enrollment. Students who double major and choose to complete the capstone requirement in their other major may waive the communication studies BA capstone, and they do not need to replace the 1 credit.

Capstone Project
Take COMM 3999W concurrently with any COMM 4xxx or 5xxx course. Students must complete at least one Research Experience Course and two Core Courses prior to enrollment.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• COMM 3999W - Capstone Project [WI] (1.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 3452W - Communication and the Intercultural Reentry [WI] (3.0 cr)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• COMM 3635W - Famous Speeches [WI] (3.0 cr)
• COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
• COMM 3676W - Communicating Terrorism [GP, WI] (3.0 cr)
• COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
• COMM 3682W - Communicating War [AH, CIV, WI] (3.0 cr)
• COMM 3999W - Capstone Project [WI] (1.0 cr)
• COMM 4404W - Language Borderlands [WI] (3.0 cr)
• COMM 4602W - Contemporary Political Persuasion [WI] (3.0 cr)
• COMM 4621W - Rhetoric of Feminism [DSJ, WI] (3.0 cr)
• COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
• COMM 5615W - Introduction to Rhetorical Criticism [WI] (3.0 cr)
Twin Cities Campus
Communication Studies Minor
Communication Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18

Courses examine human communication, using humanistic and social scientific methods. Fields of study include speechmaking, rhetorical criticism, ethics, and interpersonal, small group, organizational, intercultural, and electronic (broadcasting, cable, satellite, Internet) forms of communication. Students intending to declare a minor must meet with a communication studies advisor in 274 Ford Hall.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in communication studies, but not both.

Foundation Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
  or COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)
• COMM 1313W - Analysis of Argument [WI] (3.0 cr)

Core Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• COMM 3211 - Introduction to Media Studies (3.0 cr)
• COMM 3401 - Introduction to Communication Theory (3.0 cr)
• COMM 3601 - Introduction to Rhetorical Theory (3.0 cr)

Communication Studies Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
COMM 1xxx and 3xxx
Take 0 - 2 course(s) from the following:
• COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
  or COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)
• COMM 1313W - Analysis of Argument [WI] (3.0 cr)
• COMM 19xx - Freshman Seminar

•COMM 3xxx
Take 0 - 2 course(s) totaling 0 - 8 credit(s) from the following:
• COMM 3190H - Honors Course: Research Seminar in Communication (3.0 cr)
• COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
• COMM 3202 - Audio Production and Media Literacy (3.0 cr)
• COMM 3204 - Advanced Electronic Media Production (4.0 cr)
• COMM 3211 - Introduction to Media Studies (3.0 cr)
• COMM 3221 - Musical Communication (3.0 cr)
• COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• COMM 3401 - Introduction to Communication Theory (3.0 cr)
• COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)
• COMM 3409 - Nonverbal Communication [SOCS] (3.0 cr)
• COMM 3411 - Introduction to Small Group Communication (3.0 cr)
• COMM 3422 - Interviewing and Communication (3.0 cr)
• COMM 3431 - Persuasion Theories (3.0 cr)

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Information current as of September 02, 2020
• COMM 3441 - Introduction to Organizational Communication (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 3452W - Communication and the Intercultural Reentry [WI] (3.0 cr)
• COMM 3601 - Introduction to Rhetorical Theory (3.0 cr)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• COMM 3614 - Advanced Public Policy and Debate (3.0 cr)
• COMM 3615 - Argumentation (3.0 cr)
• COMM 3625 - Communication Ethics (3.0 cr)
• COMM 3631 - Freedom of Speech [CIV] (3.0 cr)
• COMM 3635W - Famous Speeches [WI] (3.0 cr)
• COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
• COMM 3666 - Greek Intellectual Revolution (3.0 cr)
• COMM 3676W - Communicating Terrorism [GP, WI] (3.0 cr)
• COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
• COMM 3682W - Communicating War [AH, CIV, WI] (3.0 cr)
• COMM 3610 - Topics in Communication Studies (3.0 cr)
or COMM 3110H - Honors Topics in Communication Studies (3.0 cr)
• COMM 3341 - Asian American Images [AH, DSJ] (3.0 cr)
or AAS 3341 - Asian American Images [AH, DSJ] (3.0 cr)
• COMM 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
or AAS 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)

• Directed Study and Research
Take 0 - 3 credit(s) from the following:
• COMM 3970 - Directed Study (1.0 - 3.0 cr)
or COMM 3980 - Directed Instruction (3.0 cr)
or COMM 3990 - Research Practicum (1.0 - 3.0 cr)
• COMM 4xxx and 5xxx
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• COMM 4204 - Producing for Television: Theory and Practice (4.0 cr)
• COMM 4235 - Electronic Media and Ethnic Minorities--A World View (3.0 cr)
• COMM 4245 - Critical Television Studies (3.0 cr)
• COMM 4263 - Feminist Media Studies [DSJ] (3.0 cr)
• COMM 4291 - New Telecommunication Media (3.0 cr)
• COMM 4404W - Language Borderlands [WI] (3.0 cr)
• COMM 4407 - Communication and Conflict (3.0 cr)
• COMM 4471 - Communication in Marriage and Family (3.0 cr)
• COMM 4602W - Contemporary Political Persuasion [WI] (3.0 cr)
• COMM 4616 - African American Civil Rights Rhetoric (3.0 cr)
• COMM 4621W - Rhetoric of Feminism [DSJ, WI] (3.0 cr)
• COMM 5110 - Special Topics in Communication Theory (3.0 cr)
• COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
• COMM 5221 - Media, Race, and Identity (3.0 cr)
• COMM 5231 - Media Outlaws (3.0 cr)
• COMM 5261 - Political Economy of Media Culture (3.0 cr)
• COMM 5401 - Advanced Theories of Communication (3.0 cr)
• COMM 5402 - Advanced Interpersonal Communication (3.0 cr)
• COMM 5411 - Small Group Communication Research (3.0 cr)
• COMM 5431 - The Process of Persuasion (3.0 cr)
• COMM 5441 - Communication in Human Organizations (3.0 cr)
• COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
• COMM 5611 - Survey of Rhetorical Theory (3.0 cr)
• COMM 5615W - Introduction to Rhetorical Criticism [WI] (3.0 cr)
• COMM 5617 - History and Criticism of U.S. Public Discourse: 1630-1865 (3.0 cr)
• COMM 5251 - Environmental Communication [ENV] (3.0 cr)
or COMM 5250 - Environmental Communication (3.0 cr)
Twin Cities Campus
Comparative U.S. Race and Ethnicity Minor
African-American & African Studies, American Indian Studies, American Studies, Chicano & Latino Studies
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

This minor exposes students to key content, methodologies, and theories in the comparative study of African Americans, American Indians, Asian Americans, Chicanos, and Latinos in the United States. Students explore various methodologies and core concepts within the social sciences and humanities. Students develop a general knowledge of how diverse racial and ethnic individuals and groups have historically interacted with one another and might redefine themselves today. This minor draws from courses in a number of disciplines and academic approaches, and encourages social awareness, critical thinking, the development of new perspectives, and artistic appreciation.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Prospective minors are urged to enroll in 1xxx-level introductory courses offered under the AFRO, AMIN, AAS, and CHIC designators before officially declaring.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Students may combine the Comparative U.S. Race and Ethnicity Minor with any other major or minor.

Core Course
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- ANTH 4047 - Anthropology of American Culture [SOCS] (3.0 cr)
- GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
  or SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
- AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- AAS 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
  or HIST 3875W - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
- AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
  or GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)

Electives
Take 12 or more credit(s) from the following:
- AFRO 3112 - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
- CHIC 3223 - Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
- CHIC 3452 - Chicanx/Latinx Indigeneity [DSJ] (3.0 cr)
- AAS 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
  or AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
  or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
or ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
- AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- AAS 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)
or HIST 3877 - Asian American History, 1850-Present [HIS, DSJ] (3.0 cr)
- AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
or ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
- AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
or AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
or ENGL 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
- AFRO 3864 - African American History: 1619 to 1865 [HIS, CIV] (3.0 cr)
or HIST 3864 - African American History: 1619-1865 [HIS, CIV] (3.0 cr)
- AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
or HIST 3865 - African American History, 1865 to Present (3.0 cr)
- AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 5866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
- AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
- AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
- CHIC 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
or HIST 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
- CHIC 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or HIST 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
or ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
or CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
or GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
Twin Cities Campus
Computer Science B.A.
Computer Science and Engineering
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 55
- Degree: Bachelor of Arts

Computer science concerns the study of the hardware, software, and theoretical aspects of high-speed computing devices and the application of these devices to a broad spectrum of scientific, technological, and business problems. The curriculum gives students a basic understanding of computer science. After completing a required set of fundamental courses, students can arrange their subsequent work around one of several emphases within computer science. The program prepares students for a variety of industrial, governmental, and business positions involving the use of computers, or for graduate work in the field.

The Computer Science B.A. is a good fit for someone who wants to learn Computer Science + X. It allows room to explore another area of study when compared the technical course heavy Computer Science BS program. The B.A. includes a richer set of elective credits than the B.S. For application areas that involve the liberal arts, this broader background may be more appropriate. The B.A. may also be a more efficient option for students pursuing a double major or a large minor to stay on track for a four-year graduation.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 5 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
- 3.20 already admitted to the degree-granting college
- 3.20 transferring from another University of Minnesota college
- 3.20 transferring from outside the University

A 3.2 technical GPA or above will guarantee admission. Students applying to the major with below a 3.2 technical GPA will be considered for admission based on space available in the program. Information on the Technical GPA can be found z.umn.edu/techgpa

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics Core
Take 3 or more course(s) totaling 12 or more credit(s) from the following:
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
  or MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
  or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
- Acceptable Substitution Combination
  MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
  or MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
  or MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)

Computer Science Foundation Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
Option 1 (Preferred)
  Students who intend to major in Computer Science should complete this sequence.
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
or CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)
or Option 2
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Computer Science BA is CSCI.

At least 12 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may complete no more than one degree in the computer science program: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take 6 or more course(s) totaling 23 or more credit(s) from the following:

Statistics
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
or STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
or STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 4653 - Elementary Probability (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or Acceptable Substitution Combination
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

• Linear Algebra
• CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
or MATH 2142 - Elementary Linear Algebra (4.0 cr)
or Acceptable Substitution Combination
MATH 4242 - Applied Linear Algebra (4.0 cr)
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2471 - UM Talented Youth Mathematics Program--Calculus II, Second Semester [MATH] (2.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or Acceptable Honors Substitution Combination
MATH 3592H - Honors Mathematics I (5.0 cr)
MATH 3593H - Honors Mathematics II (5.0 cr)

• Computer Architecture
• CSCI 2021 - Machine Architecture and Organization (4.0 cr)
or EE 2361 - Introduction to Microcontrollers (4.0 cr)

• Advanced Programming Principles
• CSCI 2041 - Advanced Programming Principles (4.0 cr)

• Algorithms and Data Structures
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• Operating Systems
  • CSCI 4061 - Introduction to Operating Systems (4.0 cr)

Electives
Take 8 or more credit(s) from the following:
  • CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
  • CSCI 4131 - Internet Programming (3.0 cr)
  • CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
  • CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
  • CSCI 4950 - Senior Software Project (3.0 cr)
  • CSCI 5103 - Operating Systems (3.0 cr)
  • CSCI 5105 - Introduction to Distributed Systems (3.0 cr)
  • CSCI 5106 - Programming Languages (3.0 cr)
  • CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
  • CSCI 5117 - Developing the Interactive Web (3.0 cr)
  • CSCI 5123 - Recommender Systems (3.0 cr)
  • CSCI 5125 - Collaborative and Social Computing (3.0 cr)
  • CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
  • CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)
  • CSCI 5161 - Introduction to Compilers (3.0 cr)
  • CSCI 5221 - Foundations of Advanced Networking (3.0 cr)
  • CSCI 5231 - Wireless and Sensor Networks (3.0 cr)
  • CSCI 5271 - Introduction to Computer Security (3.0 cr)
  • CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
  • CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
  • CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
  • CSCI 5451 - Introduction to Parallel Computing: Architecture, Algorithms, and Programming (3.0 cr)
  • CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
  • CSCI 5471 - Modern Cryptography (3.0 cr)
  • CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
  • CSCI 5512 - Artificial Intelligence II (3.0 cr)
  • CSCI 5521 - Introduction to Machine Learning (3.0 cr)
  • CSCI 5523 - Introduction to Data Mining (3.0 cr)
  • CSCI 5525 - Machine Learning (3.0 cr)
  • CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)
  • CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
  • CSCI 5561 - Computer Vision (3.0 cr)
  • CSCI 5563 - Multiview 3D Geometry in Computer Vision (3.0 cr)
  • CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)
  • CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
  • CSCI 5609 - Visualization (3.0 cr)
  • CSCI 5611 - Animation & Planning in Games (3.0 cr)
  • CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)
  • CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
  • CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr)
  • CSCI 5751 - Big Data Engineering and Architecture (3.0 cr)
  • CSCI 5801 - Software Engineering I (3.0 cr)
  • CSCI 5802 - Software Engineering II (3.0 cr)
  • CSCI 4203 - Computer Architecture (4.0 cr)
  • EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
  • CSCI 4211 - Introduction to Computer Networks (3.0 cr)
  • CSCI 5211 - Data Communications and Computer Networks (3.0 cr)
  • CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
  • CSCI 5511 - Artificial Intelligence I (3.0 cr)
  • CSCI 4707 - Practice of Database Systems (3.0 cr)
  • CSCI 5707 - Principles of Database Systems (3.0 cr)
  • CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
  • HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
  • CSCI 5204 - Advanced Computer Architecture (3.0 cr)
  • EE 5364 - Advanced Computer Architecture (3.0 cr)

• Advanced Project Laboratory, Topics, and Directed Study
Take at most 3 credit(s) from the following:
  • CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
  • CSCI 5980 - Special Topics in Computer Science (1.0 - 3.0 cr)
  • CSCI 5991 - Independent Study (1.0 - 3.0 cr)
• CSCI 5994 - Directed Research (1.0 - 3.0 cr)

Capstone
Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the Computer Science BA capstone.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• CSCI 3081W - Program Design and Development [WI] (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CSCI 3081W - Program Design and Development [WI] (4.0 cr)
• CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
• CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
• CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated Computer Science B.A./M.S. Program
The Department of Computer Science & Engineering offers an integrated Bachelors and Masters Degree program. Students accepted to the integrated program will be guaranteed admission to the Computer Science MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate programs. Applicants must be enrolled University of Minnesota Twin Cities students admitted to a Computer Science or Computer Engineering undergraduate program. Applicants must meet a Technical GPA minimum of 3.5 (as defined by the College of Science & Engineering) or they must have a strong recommendation from a Computer Science and Engineering faculty member or instructor (not an ECE Faculty member). Applicants must have at least 75 credits completed at the time of their application. Applicants must have passed with a C- or better all of the following courses: CSCI 1933 or 1913 CSCI 2011 CSCI 2021 (CSCI students) or EE 2361 (CompE students) CSCI 2033 or a math course containing linear algebra content CSCI 2041 (CSCI students only) CSCI 3081W (CSCI students only), CSCI 4041, and CSCI 4061 (applicants can have one of these courses in progress at the time of application) Full application instructions can be found at cs.umn.edu/integrated

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Coursework applied to the graduate degree must be taken at the graduate level (i.e., 5xxx or above) Credits being applied to the Computer Science Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to a Computer Science Ph.D. within our department if a student applies and is admitted. Credits cannot also be applied to the undergraduate degree (i.e., no double dipping). Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max):

CSCI 8970 - Computer Science Colloquium (1 credit)
Course to meet the Theory and Algorithms Breadth requirement (3 credits)*
Course to meet the Architecture, Systems, & Software Breadth requirement (3 credits)*
Course to meet the Applications Breadth requirement (3 credits)*
CSCI 5XXX level course that fits your interests and background (3 credits) or an approved graduate level elective or graduate minor course. We recommend waiting to take CSCI 8XXX level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites.
CSCI 5XXX level course that fits your interests and background (3 credits) or an approved graduate level elective or graduate minor course. We recommend waiting to take CSCI 8XXX level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites.

*Please refer to the Department of Computer Science & Engineering webpage for more details on which courses count for specific breadth requirements.
Twin Cities Campus

Computer Science Minor
CLA Dean's Office
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 17 to 20

The computer science minor is for students who want to take a basic core of computer science courses to enhance or supplement their major programs. Knowledge of computing is useful for students majoring in engineering, the physical, biological and social sciences, business, design and the visual arts, just to name a few. The minor increases job opportunities and provides a base for more advanced studies and independent learning.

The minor teaches problem solving and computational thinking skills, as well as fundamental programming concepts, practical knowledge of computer programming languages, data structures, and algorithmic development techniques that are essential to modern computing. Students have flexibility in choosing courses to meet the minor requirements. Advanced courses provide detailed knowledge in specific topics, such as data bases, networks, internet programming, or game design.

To succeed, students in the minor need to have solid analytical and abstraction skills. Students who are not planning on taking calculus should take at least one math class, such as college algebra and probability or a pre-calculus course before starting the minor.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students who wish to complete the minor should consult with a computer science departmental advisor at csciug@umn.edu to discuss course choices and finalize the declaration process.

Students may earn no more than one undergraduate degree in computer science: a BA or a BS or a minor. Additionally, students who earn a B.Comp.E. in computer engineering may not minor in computer science.

Other coursework may be accepted with prior advisor approval.

The computer science minor consists of 5 three- or four-credit, advisor-approved CSCI courses.

Computer Science Foundation Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
Option 1 (Preferred)
Students who intend to major in Computer Science should complete this sequence.
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
or CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)
• Option 2
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)

Electives
Take exactly 3 course(s) totaling 9 - 12 credit(s) from the following:
Lower-Division Electives
Take 0 - 2 course(s) totaling 0 - 8 credit(s) from the following:
• CSCI 2021 - Machine Architecture and Organization (4.0 cr)
• CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
• CSCI 2041 - Advanced Programming Principles (4.0 cr)
• CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
Upper-Division Electives
Honors thesis, independent study, and directed research may be considered with prior departmental approval.
Take 1 - 3 course(s) totaling 3 - 12 credit(s) from the following:
- CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- CSCI 4061 - Introduction to Operating Systems (4.0 cr)
- CSCI 4131 - Internet Programming (3.0 cr)
- CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
- CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
- CSCI 5103 - Operating Systems (3.0 cr)
- CSCI 5105 - Introduction to Distributed Systems (3.0 cr)
- CSCI 5106 - Programming Languages (3.0 cr)
- CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
- CSCI 5117 - Developing the Interactive Web (3.0 cr)
- CSCI 5123 - Recommender Systems (3.0 cr)
- CSCI 5125 - Collaborative and Social Computing (3.0 cr)
- CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
- CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)
- CSCI 5161 - Introduction to Compilers (3.0 cr)
- CSCI 5221 - Foundations of Advanced Networking (3.0 cr)
- CSCI 5231 - Wireless and Sensor Networks (3.0 cr)
- CSCI 5271 - Introduction to Computer Security (3.0 cr)
- CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
- CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
- CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
- CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
- CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
- CSCI 5511 - Artificial Intelligence I (3.0 cr)
- CSCI 5512 - Artificial Intelligence II (3.0 cr)
- CSCI 5521 - Introduction to Machine Learning (3.0 cr)
- CSCI 5523 - Introduction to Data Mining (3.0 cr)
- CSCI 5525 - Machine Learning (3.0 cr)
- CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)
- CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
- CSCI 5561 - Computer Vision (3.0 cr)
- CSCI 5563 - Multiview 3D Geometry in Computer Vision (3.0 cr)
- CSCI 5607 - Fundamentals of Computer Graphics 1 (3.0 cr)
- CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
- CSCI 5609 - Visualization (3.0 cr)
- CSCI 5611 - Animation & Planning in Games (3.0 cr)
- CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)
- CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
- CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr)
- CSCI 5751 - Big Data Engineering and Architecture (3.0 cr)
- CSCI 5801 - Software Engineering I (3.0 cr)
- CSCI 5802 - Software Engineering II (3.0 cr)
- CSCI 5980 - Special Topics in Computer Science (1.0 - 3.0 cr)
- CSCI 4203 - Computer Architecture (4.0 cr)
or EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
- CSCI 4211 - Introduction to Computer Networks (3.0 cr)
or CSCI 5211 - Data Communications and Computer Networks (3.0 cr)
- CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
or CSCI 5511 - Artificial Intelligence I (3.0 cr)
- CSCI 4707 - Practice of Database Systems (3.0 cr)
or CSCI 5707 - Principles of Database Systems (3.0 cr)
- CSCI 5204 - Advanced Computer Architecture (3.0 cr)
or EE 5564 - Advanced Computer Architecture (3.0 cr)
**Twin Cities Campus**

**Creative Writing Minor**

**English Language & Literature**

**College of Liberal Arts**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 19 to 22

Students who minor in creative writing study the craft of writing and revision and the creation of imaginative literary work. They also practice close reading and discussion of published fiction, nonfiction, and/or poetry, including pre-twentieth-century literature.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

Students must complete 4 credits before admission to the program.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://www.umn.edu/admissions).

**Required prerequisites**

**Introduction to Creative Writing**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- ENGW 1101W - Introduction to Creative Writing [LITR, WI] (4.0 cr)

**Minor Requirements**

Coursework completed outside of the Department of English may be counted, but only with prior departmental approval.

A given course may only count towards one minor requirement.

Students may earn a bachelor of arts in English and a minor in creative writing, or a minor in English and a minor in creative writing. Students may not earn a BA in English and a minor in English. Only one course may count toward both the major and minor or toward both minors.

Students are encouraged to take a minimum of two tiered workshops in their chosen genre (either as an introductory course, intermediate course, or advanced elective).

**Introductory Courses**

ENGW 1101W is a prerequisite to declaring the minor.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ENGW 1102 - Introduction to Fiction Writing (3.0 cr)
- or ENGW 1103 - Introduction to Poetry Writing (3.0 cr)
- or ENGW 1104 - Introduction to Literary Nonfiction Writing (3.0 cr)

**Intermediate Course**

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ENGW 3102 - Intermediate Fiction Writing (3.0 cr)
- or ENGW 3104 - Intermediate Poetry Writing (3.0 cr)
- or ENGW 3106 - Intermediate Literary Nonfiction Writing (3.0 cr)

**Historical Foundation Course**

Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
- ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
- ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)
- ENGL 3026 - Mediterranean Wanderings: Literature and History on the Borders of Three Continents [GP] (3.0 cr)
- ENGL 3092 - The Original Walking Dead: Misbehaving Dead Bodies in the 19th Century [LITR] (3.0 cr)
- ENGL 3114 - Dreams and Dream Visions (3.0 cr)
Electives

Only students pursuing both a BA in English and this minor should take ENGW 3960W. Students pursuing other majors should choose different electives from the list below. Please note: ENGW 3960W can be taken by department permission only and requires completion of 6 credits of ENGW courses and submission of a creative writing sample before registering.

Take 2 or more course(s) totaling 6 - 8 credit(s) from the following:

- ENGW 3110 - Topics in Creative Writing (3.0 cr)
- ENGW 3960W - Capstone Seminar in Creative Writing [WI] (4.0 cr)
- ENGW 4205 - Screenwriting (3.0 cr)
- ENGW 3102 - Intermediate Fiction Writing (3.0 cr)
  or ENGW 3104 - Intermediate Poetry Writing (3.0 cr)
  or ENGW 3106 - Intermediate Literary Nonfiction Writing (3.0 cr)

One of the following courses may also be used as an elective with instructor permission:

- ENGW 5102 - Graduate Fiction Writing (4.0 cr)
  or ENGW 5104 - Graduate Poetry Writing (4.0 cr)
  or ENGW 5106 - Graduate Literary Nonfiction Writing (4.0 cr)
  or ENGW 5310 - Reading as Writers (4.0 cr)

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Information current as of September 02, 2020
Twin Cities Campus
Cultural Studies and Comparative Literature B.A.
Cultural Studies & Comparative Literature
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 32
• Degree: Bachelor of Arts

The major in Cultural Studies and Comparative Literature (CSCL) is a flexible and multidisciplinary BA program in the Liberal Arts. Our courses examine the ways global cultural and artistic practices reflect and transform modes of knowing, of feeling, of acting politically, and underpin conceptions of both individual and collective social identity. The CSCL curriculum covers a wide range of media and art forms, from literature, to cinema, popular culture, music, and the visual arts. The department places a particular focus on the power of ideas; we like to think about how abstract questions in philosophy and theory address concrete problems in our material world.

CSCL strives for a broad, international scope, and ranges widely across history and geography. We aim to produce critical, thoughtful, and well-rounded citizens prepared to work in a wide range of careers from media and journalism to academia, law, politics, medicine, non-profit work in schools, libraries, archives, museums, and community organizations, to advertising, business, entertainment, and other creative fields. Many of our graduates are path-breaking intellectuals, artistic innovators, and committed participants in social struggles that will shape our collective future.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Cultural Studies and Comparative Literature BA is CSCL.

In exceptional cases, courses from other units may be substituted for department major courses if approved by the undergraduate adviser or the director of undergraduate studies.

At least 10 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a minor in cultural studies and comparative literature, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Courses
Take 2 - 3 course(s) totaling 6 - 11 credit(s) from the following:

Lecture Courses
Take 0 or more course(s) from the following:
• CSCL 1001W - Introduction to Cultural Studies: Rhetoric, Power, Desire [AH, DSJ, WI] (3.0 cr)
• CSCL 1101W - Literature [LITR, WI] (3.0 cr)
• CSCL 1201W - Cinema [AH, WI] (4.0 cr)
CSCL 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
or
SCMC 1201W - Cinema [AH, WI] (4.0 cr)
or
SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
• CSCL 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
or
SCMC 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
• Introductory Seminars
Take 0 or more course(s) from the following:
• CSCL 1301W - Reading Culture: Theory and Practice [AH, WI] (3.0 cr)
or
SCMC 1301W - Reading Literature: Theory and Practice [LITR, WI] (3.0 cr)
or
CSCL 1501W - Reading History: Theory and Practice [HIS, WI] (3.0 cr)

Electives
The number of credits required will depend on the amount of credits taken towards the Foundation Courses and the Capstone. Take 5 or more course(s) totaling 11 or more credit(s) from the following:

Gateway Course
All CSCL majors are encouraged to enroll in the Gateway Course soon after declaring the major, which provides an intellectual foundation for more advanced coursework. Take 0 or more course(s) from the following:
• CSCL 3005 - Seminar in Critical Thought (3.0 cr)

• Literature
Take 0 or more course(s) from the following:
• CSCL 3111W - Close Reading [LITR, WI] (3.0 cr)
• CSCL 3117 - Concepts of Literary Study [LITR] (3.0 cr)
• CSCL 3120 - Poetry as Cultural Critique (3.0 cr)
• CSCL 3122 - Reading Literary Movements [LITR] (3.0 cr)
• CSCL 3130W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)

• Cinema, Media, and Sound
Take 0 or more course(s) from the following:
• CSCL 3231 - Comedy: Media, Politics & Society [AH] (3.0 cr)
or
SCMC 3231 - Comedy: Media, Politics & Society [AH] (3.0 cr)
• CSCL 3251 - Popular Music and Mass Culture [AH] (3.0 cr)
or
SCMC 3251 - Popular Music and Mass Culture [AH] (3.0 cr)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
or
SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
or
SCMC 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
or
SCMC 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
• CSCL 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
or
SCMC 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
• CSCL 3221 - On Television [CIV] (3.0 cr)
or
SCMC 3221 - On Television [CIV] (3.0 cr)

• Culture
Take 0 or more course(s) from the following:
• CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3322 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)
• CSCL 3323 - Science and Culture [AH] (3.0 cr)
• CSCL 3334 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
• CSCL 3335 - Aliens: Science Fiction to Social Theory [DSJ] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3352W - Queer Aesthetics & Queer Critique [LITR, DSJ, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or
GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

• Theory
Take 0 or more course(s) from the following:
• CSCL 3405 - Marx for Today [AH, DSJ] (3.0 cr)
• CSCL 3412W - Psychoanalysis [WI] (3.0 cr)
• CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 32681 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
or
HIST 32681 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• CSCL 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
or
HIST 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)

• Experiential Learning
Take 0 - 2 course(s) from the following:
• CSCL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• CSCL 3993 - Directed Study (1.0 - 3.0 cr)
Capstone
CSCL majors will complete their capstone by taking two CSCL 5xxx-level courses. These courses are focused seminars with a mix of graduate and undergraduate students. Some seminars invite students to investigate a particular medium, while others explore a specific topic in depth. Capstone courses foster critical independence while offering students an intellectual synthesis of the coursework in their major. In order for CSCL 5993 to count, it must be taken for 3 credits.

Students who double major and choose to complete the capstone requirement in their other major are still required to take the Cultural Studies and Comparative Literature BA capstone.

Take exactly 2 course(s) totaling 6 - 8 cr(credit(s)) from the following:
• CSCL 5302 - Aesthetics and the Valuation of Art (3.0 cr)
• CSCL 5305 - Vision and Visuality: An Intellectual History (3.0 cr)
• CSCL 5331 - Discourse of the Novel (3.0 cr)
• CSCL 5411 - Avant-Garde Cinema (4.0 cr)
• CSCL 5555 - Introduction to Semiotics (3.0 cr)
• CSCL 5666 - Film Music: Theory, History, Practice (4.0 cr)
• CSCL 5833 - Marx, Freud, Nietzsche: Intellectual Foundations (3.0 cr)
• CSCL 5910 - Topics in Cultural Studies and Comparative Literature (3.0 cr)
• CSCL 5993 - Directed Study (1.0 - 3.0 cr)
• CSCL 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)  
  or HIST 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• CSCL 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)  
  or HIST 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• CSCL 5401 - Origins of Cultural Studies (3.0 cr)  
  or ENGL 5501 - Origins of Cultural Studies (3.0 cr)
• Honors Thesis
  Students may complete Latin Honors (cum laude, magna cum laude, or summa cum laude) through the University Honors Program. Please visit www.honors.umn.edu to see the eligibility, program, and major-related requirements.

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• CSCL 3130W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
• CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
• CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3412W - Psychoanalysis [WI] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3111W - Close Reading [LITR, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)  
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
Twin Cities Campus
Cultural Studies and Comparative Literature Minor
Cultural Studies & Comparative Literature
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 17 to 18

The minor in Cultural Studies and Comparative Literature (CSCL) is a flexible and multidisciplinary minor in the liberal arts. Our courses examine the ways global cultural and artistic practices reflect and transform modes of knowing, of feeling, of acting politically, and underpin conceptions of both individual and collective social identity. The CSCL curriculum covers a wide range of media and art forms, from literature, to cinema, popular culture, music, and the visual arts. The department places a particular focus on the power of ideas; we like to think about how abstract questions in philosophy and theory address concrete problems in our material world.

CSCL strives for a broad, international scope, and ranges widely across history and geography. We aim to produce critical, thoughtful, and well-rounded citizens prepared to work in a wide range of careers from media and journalism to academia, law, politics, medicine, non-profit work in schools, libraries, archives, museums, and community organizations, to advertising, business, entertainment, and other creative fields. Many of our graduates are path-breaking intellectuals, artistic innovators, and committed participants in social struggles that will shape our collective future.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in cultural studies and comparative literature, but not both.

Foundation Courses
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

Lecture Courses
Take 0 or more course(s) from the following:
• CSCL 1001W - Introduction to Cultural Studies: Rhetoric, Power, Desire [AH, DSJ, WI] (3.0 cr)
• CSCL 1101W - Literature [LITR, WI] (3.0 cr)
• CSCL 1201W - Cinema [AH, WI] (4.0 cr)
  or SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
  or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
  or SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
• CSCL 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
  or SCMC 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)

Introductory Seminars
Take 0 or more course(s) from the following:
• CSCL 1301W - Reading Culture: Theory and Practice [AH, WI] (3.0 cr)
• CSCL 1401W - Reading Literature: Theory and Practice [LITR, WI] (3.0 cr)
• CSCL 1501W - Reading History: Theory and Practice [HIS, WI] (3.0 cr)

Electives
Take 14 or more credit(s) from the following:

Gateway Course
Take exactly 0 course(s) from the following:
• CSCL 3005 - Seminar in Critical Thought (3.0 cr)

Literature
Take 0 or more course(s) from the following:
• CSCL 3111W - Close Reading [LITR, WI] (3.0 cr)
• CSCL 3117 - Concepts of Literary Study [LITR] (3.0 cr)
• CSCL 3120 - Poetry as Cultural Critique (3.0 cr)
• CSCL 3122 - Reading Literary Movements [LITR] (3.0 cr)
• CSCL 3130W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
• Cinema, Media, and Sound
Take 0 or more course(s) from the following:

• CSCL 3231 - Comedy: Media, Politics & Society [AH] (3.0 cr)
• CSCL 3251 - Popular Music and Mass Culture [AH] (3.0 cr)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
  or SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
  or SCMC 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
  or SCMC 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
• CSCL 3210W - Screen Cultures [AH, TS, WI] (3.0 cr)
  or SCMC 3210W - Screen Cultures [AH, TS, WI] (3.0 cr)
• CSCL 3220W - On Television [CIV] (3.0 cr)
  or SCMC 3220W - On Television [CIV] (3.0 cr)

• Culture
  Take 0 or more course(s) from the following:
  • CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
  • CSCL 3322 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)
  • CSCL 3323 - Science and Culture [AH] (3.0 cr)
  • CSCL 3344 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
  • CSCL 3335 - Aliens: Science Fiction to Social Theory [DSJ] (3.0 cr)
  • CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
  • CSCL 3352W - Queer Aesthetics & Queer Critique [LITR, DSJ, WI] (3.0 cr)
  • CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

• Theory
  Take 0 or more course(s) from the following:
  • CSCL 3405 - Marx for Today [AH, DSJ] (3.0 cr)
  • CSCL 3412W - Psychoanalysis [WI] (3.0 cr)
  • CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
  • CSCL 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
    or HIST 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
  • CSCL 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
    or HIST 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)

• Advanced Courses
  Some 5xxx-level courses will require departmental consent.
  Take 0 or more course(s) from the following:
  • CSCL 5302 - Aesthetics and the Valuation of Art (3.0 cr)
  • CSCL 5305 - Vision and Visuality: An Intellectual History (3.0 cr)
  • CSCL 5331 - Discourse of the Novel (3.0 cr)
  • CSCL 5411 - Avant-Garde Cinema (4.0 cr)
  • CSCL 5555 - Introduction to Semiotics (3.0 cr)
  • CSCL 5666 - Film Music: Theory, History, Practice (4.0 cr)
  • CSCL 5833 - Marx, Freud, Nietzsche: Intellectual Foundations (3.0 cr)
  • CSCL 5910 - Topics in Cultural Studies and Comparative Literature (3.0 cr)
  • CSCL 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
    or HIST 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
  • CSCL 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
    or HIST 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
  • CSCL 5401 - Origins of Cultural Studies (3.0 cr)
    or ENGL 5501 - Origins of Cultural Studies (3.0 cr)

• Experiential Learning
  Take 0 - 2 course(s) from the following:
  • CSCL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
  • CSCL 3993 - Directed Study (1.0 - 3.0 cr)
  • CSCL 4993 - Directed Study (1.0 - 3.0 cr)
  • CSCL 5993 - Directed Study (1.0 - 3.0 cr)
  • SCMC 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
Twin Cities Campus
Dance B.A.
Theatre Arts & Dance Dept
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 45
• Degree: Bachelor of Arts

The BA in dance emphasizes general studies of contemporary dance in a global context. This degree prepares the student for further studies in such areas of dance as performance, choreography, dance theory, teaching, arts management, movement therapy, and kinesiology.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission into the BA program is by audition only.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Dance BA is DNCE.

At least 17 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a BFA in dance, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Dance Composition
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
• DNCE 3601 - Dance Composition 1 (3.0 cr)
• DNCE 3602 - Dance Composition 2 (3.0 cr)
• DNCE 4601 - Dance Composition 3 (3.0 cr)

Dance Studies
Take exactly 5 course(s) totaling exactly 13 credit(s) from the following:
• DNCE 1626 - Music for Dance [AH] (3.0 cr)
• DNCE 3401W - Dance History 1 [GP, WI] (3.0 cr)
• DNCE 3402W - Dance History 2 [WI] (3.0 cr)
• DNCE 4443 - Theorizing Dancing Bodies (3.0 cr)
• Course must be taken for 1 credit to count toward this requirement.
  • DNCE 3901 - Career Readiness in Dance (1.0 - 3.0 cr)

Dance Technique

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Information current as of September 02, 2020
Modern/Contemporary Technique
Courses must be taken for 2 credits to count toward this requirement.
Take exactly 4 course(s) totaling exactly 8 credit(s) from the following:
- DNCE 1010 - Modern/Contemporary Dance Technique 3 (1.0 - 2.0 cr)
- DNCE 1020 - Modern/Contemporary Dance Technique 4 (1.0 - 2.0 cr)
- DNCE 3010 - Modern/Contemporary Dance Technique 5 (2.0 cr)
- DNCE 3020 - Modern/Contemporary Dance Technique 6 (2.0 cr)

Dance Performance
Performance credits should be spread throughout four years of coursework. Repertory or Intensive courses may only fulfill one performance course toward the requirement.
Take exactly 2 course(s) totaling 2 or more credit(s) from the following:
- DNCE 3700 - Performance (1.0 cr)
- DNCE 5700 - Performance (1.0 - 2.0 cr)
Take 0 - 1 course(s) totaling 0 or more credit(s) from the following:
- DNCE 1701 - Freshman/Sophomore Repertory (1.0 cr)
- DNCE 3701 - Summer Dance Intensive (1.0 - 3.0 cr)

Electives
Other courses in dance or fields related to dance may count here, but must be chosen in consultation with a Dance faculty advisor and approved by the Director of Dance.
Take 5 or more course(s) totaling 12 or more credit(s) from the following:

Dance Studies
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- DNCE 3411 - Dance and Popular Culture: Choreographing Race, Class, and Gender [DSJ] (3.0 cr)
- DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
- DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)

General Academic
Take 1 - 2 course(s) totaling 3 - 8 credit(s) from the following:
- AFRO 3112 - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
- AFRO 3301 - The Music of Black Americans [AH, DSJ] (3.0 cr)
- AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- ANTH 3003 - Cultural Anthropology (3.0 cr)
- ANTH 3036 - The Body in Society (3.0 cr)
- ANTH 3043 - Art, Aesthetics and Anthropology (3.0 cr)
- ARTH 3401 - Art on Trial [AH, CIV] (3.0 cr)
- ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
- CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
- CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
- DNCE 3334 - Introduction to Dance/Movement Therapy (2.0 cr)
- DNCE 3337 - Body Mind Centering (2.0 cr)
- DNCE 3411 - Dance and Popular Culture: Choreographing Race, Class, and Gender [DSJ] (3.0 cr)
- DNCE 3433 - Articulate Body (3.0 cr)
- DNCE 3434 - Nutrition and Body Maintenance for Movement Artists (2.0 cr)
- DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
- DNCE 3621 - Dance Production I (2.0 cr)
- DNCE 3622 - Dance Production II (2.0 cr)
- DNCE 5334 - Introduction to Dance/Movement Therapy (2.0 cr)
- DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)
- DNCE 5858 - Dance Pedagogy (3.0 - 4.0 cr)
- GLOS 3602 - In Other Worlds: Globalization and Culture (3.0 cr)
- GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
- GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
- KIN 3001 - Lifet ime Health and Wellness [SOCS] (3.0 cr)
- KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
- MUS 5950 - Topics in Music (1.0 - 4.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- TH 3716 - Stage Management (4.0 cr)
- TH 5117 - Performance and Social Change (3.0 cr)
- AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
  or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• AMST 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
or GLBT 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
• ANAT 3001 - Human Anatomy (3.0 cr)
or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)
• GWSS 4103 - Transnational Feminist Theory [GP] (3.0 cr)
or GWSS 5104 - Transnational Feminist Theory (3.0 cr)
• GWSS 4403 - Queering Theory (3.0 cr)
or GLBT 4403 - Queering Theory (3.0 cr)

• Technique
Take 2 or more course(s) totaling 3 or more credit(s) from the following:
• DNCE 1040 - Modern Dance Partnering Technique (1.0 cr)
• DNCE 1110 - Ballet Technique 3 (2.0 cr)
• DNCE 1120 - Ballet Technique 4 (2.0 cr)
• DNCE 1210 - Jazz Technique 3 (1.0 cr)
• DNCE 1220 - Jazz Technique 4 (1.0 cr)
• DNCE 1301 - Tap Technique 1 (1.0 cr)
• DNCE 1302 - Tap Technique 2 (1.0 cr)
• DNCE 1313 - African Based Movement (1.0 cr)
• DNCE 1327 - Argentine Tango (1.0 cr)
• DNCE 1331 - Yoga (1.0 cr)
• DNCE 1335 - Tai Chi Ch’uan (1.0 cr)
• DNCE 1343 - Urban & Street Dance Forms 1: Introduction (1.0 cr)
• DNCE 1349 - Contact Improvisation (1.0 cr)
• DNCE 1351 - African Diasporic Movement 1 (1.0 cr)
• DNCE 1353 - African Diasporic Movement 3 (1.0 cr)
• DNCE 1354 - African Diasporic Movement 4 (1.0 cr)
• DNCE 3110 - Ballet Technique 5 (2.0 cr)
• DNCE 3120 - Ballet Technique 6 (2.0 cr)
• DNCE 3210 - Jazz Technique 5 (1.0 cr)
• DNCE 3220 - Jazz Technique 6 (1.0 cr)
• DNCE 3301 - Tap Technique 3 (1.0 cr)
• DNCE 3302 - Tap Technique 4 (1.0 cr)
• DNCE 3341 - Urban & Street Dance Forms 3: Emerging Scholar (1.0 cr)
• DNCE 3342 - Urban & Street Dance Forms 4: Scholar (1.0 cr)
• DNCE 3351 - African Diasporic Movement 5 (1.0 cr)
• DNCE 3352 - African Diasporic Movement 6 (1.0 cr)
• DNCE 5010 - Modern/Contemporary Dance Technique 7 (2.0 cr)
• DNCE 5020 - Modern/Contemporary Dance Technique 8 (2.0 cr)
• DNCE 5030 - Modern/Contemporary Dance Technique 9 (2.0 cr)
• DNCE 5040 - Modern/Contemporary Dance Technique 10 (2.0 cr)
• DNCE 5110 - Ballet Technique 7 (1.0 cr)
• DNCE 5120 - Ballet Technique 8 (1.0 cr)

Capstone
The dance program offers a flexible capstone course which allow its majors to pursue final projects under the guidance of faculty mentors in the three focus areas of our program: performance, creation, or intellectual endeavor or some combination of the three. Examples are the production of evenings of performance, arts administration internships, research papers, collaborative projects with other student artists and scholars within and beyond the field of dance.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Dance BA capstone, but are still responsible for taking a minimum of 45 credits towards the Dance BA.
• DNCE 4901 - Capstone Seminar for Dance (1.0 - 2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST 3113W</td>
<td>Global Minnesota: Diversity in the 21st Century [DSJ, WI]</td>
<td>3.0</td>
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<tr>
<td>AMST 3252W</td>
<td>American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI]</td>
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<td>CSCL 3351W</td>
<td>The Body and the Politics of Representation [HIS, WI]</td>
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<tr>
<td>CSCL 3425W</td>
<td>Theories of Culture [AH, WI]</td>
<td>3.0</td>
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<td>CSCL 3430W</td>
<td>Sexuality and Culture [DSJ, WI]</td>
<td>3.0</td>
<td></td>
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<tr>
<td>CSCL 3487W</td>
<td>Dance and Citizenship: Land, Migration, and Diaspora [WI]</td>
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<td>CSCL 3401W</td>
<td>Dance History 1 [GP, WI]</td>
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<td>CSCL 3402W</td>
<td>Dance History 2 [WI]</td>
<td>3.0</td>
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<td>DNCE 3487W</td>
<td>Dance and Citizenship: Land, Migration, and Diaspora [WI]</td>
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<td>AAS 3251W</td>
<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI]</td>
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<tr>
<td>CSCL 3350W</td>
<td>Sexuality and Culture [DSJ, WI]</td>
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<tr>
<td>GLBT 3456W</td>
<td>Sexuality and Culture [DSJ, WI]</td>
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</table>
Twin Cities Campus
Dance B.F.A.
Theatre Arts & Dance Dept
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 78 to 82
- Degree: Bachelor of Fine Arts

Founded in the context of global contemporary dance, the BFA in dance emphasizes excellence in technique, composition, performance, and dance studies. The program accepts students through a rigorous audition and prepares them through subsequent training designed to support professional careers in performance, creative or discursive work, or further studies.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission into the BFA program is by audition only.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
The dance BFA does not have a second language requirement, but students may choose to complete a second language sequence.

At least 31 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a BFA in dance, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Dance Composition
Take exactly 5 course(s) totaling exactly 14 credit(s) from the following:
- DNCE 3601 - Dance Composition 1 (3.0 cr)
- DNCE 3602 - Dance Composition 2 (3.0 cr)
- DNCE 4601 - Dance Composition 3 (3.0 cr)
- DNCE 4602 - Dance Composition 4 (3.0 cr)
- DNCE 5601 - Dance Composition 5 (1.0 - 2.0 cr)

Course must be taken for 2 credits to count toward this requirement.

Dance Studies
Take exactly 9 course(s) totaling exactly 23 credit(s) from the following:
- DNCE 1626 - Music for Dance [AH] (3.0 cr)
- DNCE 3401W - Dance History 1 [GP, WI] (3.0 cr)
- DNCE 3402W - Dance History 2 [WI] (3.0 cr)
- DNCE 3433 - Articulate Body (3.0 cr)
- DNCE 3621 - Dance Production I (2.0 cr)
- DNCE 3622 - Dance Production II (2.0 cr)
- DNCE 4443 - Theorizing Dancing Bodies (3.0 cr)

Course must be taken for 1 credit to count toward this requirement.
- DNCE 3901 - Career Readiness in Dance (1.0 - 3.0 cr)
• Course must be taken for 3 credits to count toward this requirement.
  • DNCE 5858 - Dance Pedagogy (3.0 - 4.0 cr)

Dance Technique
Take 13 - 15 course(s) totaling 23 - 27 credit(s) from the following:

Modern/Contemporary Technique
Courses must be taken for 2 credits to count toward this requirement.
Take exactly 8 course(s) totaling exactly 16 credit(s) from the following:
  • DNCE 1010 - Modern/Contemporary Dance Technique 3 (1.0 - 2.0 cr)
  • DNCE 1020 - Modern/Contemporary Dance Technique 4 (1.0 - 2.0 cr)
  • DNCE 3010 - Modern/Contemporary Dance Technique 5 (2.0 cr)
  • DNCE 3020 - Modern/Contemporary Dance Technique 6 (2.0 cr)
  • DNCE 5010 - Modern/Contemporary Dance Technique 7 (2.0 cr)
  • DNCE 5020 - Modern/Contemporary Dance Technique 8 (2.0 cr)
  • DNCE 5030 - Modern/Contemporary Dance Technique 9 (2.0 cr)
  • DNCE 5040 - Modern/Contemporary Dance Technique 10 (2.0 cr)

Ballet Technique
The amount of credits required will depend on a student's placement. Students must complete Ballet Technique 5 and Ballet Technique 6.
Take 0 - 2 course(s) totaling 0 - 4 credit(s) from the following:
  • DNCE 1110 - Ballet Technique 3 (2.0 cr)
  • DNCE 1120 - Ballet Technique 4 (2.0 cr)
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
  • DNCE 3110 - Ballet Technique 5 (2.0 cr)
  • DNCE 3120 - Ballet Technique 6 (2.0 cr)

Rhythmic/Percussive Technique
Students must complete one sequence and one elective at level 3 & 4.
Take exactly 3 course(s) totaling exactly 3 credit(s) from the following:

Rhythmic/Percussive Sequence
  • African Diasporic Movement
    DNCE 1353 - African Diasporic Movement 3 (1.0 cr)
    DNCE 1354 - African Diasporic Movement 4 (1.0 cr)
  or Jazz Technique
    DNCE 1210 - Jazz Technique 3 (1.0 cr)
    DNCE 1220 - Jazz Technique 4 (1.0 cr)
  or Tap Technique
    DNCE 3301 - Tap Technique 3 (1.0 cr)
    DNCE 3302 - Tap Technique 4 (1.0 cr)
  or Urban & Street Dance Forms
    DNCE 3341 - Urban & Street Dance Forms 3: Emerging Scholar (1.0 cr)
    DNCE 3342 - Urban & Street Dance Forms 4: Scholar (1.0 cr)

Rhythmic/Percussive Elective
This course must be of a different technique than the level 3 & 4 sequence.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
  • DNCE 1210 - Jazz Technique 3 (1.0 cr)
  • DNCE 1220 - Jazz Technique 4 (1.0 cr)
  • DNCE 1353 - African Diasporic Movement 3 (1.0 cr)
  • DNCE 1354 - African Diasporic Movement 4 (1.0 cr)
  • DNCE 3210 - Jazz Technique 5 (1.0 cr)
  • DNCE 3220 - Jazz Technique 6 (1.0 cr)
  • DNCE 3301 - Tap Technique 3 (1.0 cr)
  • DNCE 3302 - Tap Technique 4 (1.0 cr)
  • DNCE 3341 - Urban & Street Dance Forms 3: Emerging Scholar (1.0 cr)
  • DNCE 3342 - Urban & Street Dance Forms 4: Scholar (1.0 cr)
  • DNCE 3351 - African Diasporic Movement 5 (1.0 cr)
  • DNCE 3352 - African Diasporic Movement 6 (1.0 cr)

Dance Performance
Performance credits should be spread throughout four years of coursework. Repertory or Intensive courses may only fulfill one performance course toward the requirement.
Take exactly 4 course(s) totaling 4 or more credit(s) from the following:
  • DNCE 3700 - Performance (1.0 cr)
  • DNCE 5700 - Performance (1.0 - 2.0 cr)
Take 0 - 1 course(s) totaling 0 or more credit(s) from the following:
  • DNCE 1701 - Freshman/Sophomore Repertory (1.0 cr)
• DNCE 3701 - Summer Dance Intensive (1.0 - 3.0 cr)

Electives
Other courses in dance or fields related to dance may count here, but must be chosen in consultation with a Dance faculty advisor and approved by the Director of Dance.
Take 7 or more course(s) totaling 13 or more credit(s) from the following:

Dance Studies
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• DNCE 3411 - Dance and Popular Culture: Choreographing Race, Class, and Gender [DSJ] (3.0 cr)
• DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
• DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)

• General Academic
Take 1 - 2 course(s) totaling 3 - 8 credit(s) from the following:
• AFRO 3112 - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
• AFRO 3301 - The Music of Black Americans [AH, DSJ] (3.0 cr)
• AMST 3113W - Transnational Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
• AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
• AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
• AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• ANTH 3003 - Cultural Anthropology (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 3043 - Art, Aesthetics and Anthropology (3.0 cr)
• ARTH 3401 - Art on Trial [AH, CIV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
• DNCE 3334 - Introduction to Dance/Movement Therapy (2.0 cr)
• DNCE 3337 - Body Mind Centering (2.0 cr)
• DNCE 3411 - Dance and Popular Culture: Choreographing Race, Class, and Gender [DSJ] (3.0 cr)
• DNCE 3434 - Nutrition and Body Maintenance for Movement Artists (2.0 cr)
• DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
• DNCE 3534 - Introduction to Dance/Movement Therapy (2.0 cr)
• DNCE 35493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)
• GLOS 3602 - In Other Worlds: Globalization and Culture (3.0 cr)
• GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
• GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
• GWSS 4103 - Transnational Feminist Theory [GP] (3.0 cr)
• KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
• KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
• MUS 5950 - Topics in Music (1.0 - 4.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• TH 3716 - Stage Management (4.0 cr)
• TH 5117 - Performance and Social Change (3.0 cr)
• AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [DSJ, WI] (3.0 cr)
• AMST 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
• GLBT 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
• ANAT 3001 - Human Anatomy (3.0 cr)
  or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
  or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
  or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)
• GWSS 4103 - Transnational Feminist Theory [GP] (3.0 cr)
  or GWSS 5104 - Transnational Feminist Theory (3.0 cr)
• GWSS 4403 - Queering Theory (3.0 cr)
  or GLBT 4403 - Queering Theory (3.0 cr)

• Technique
Courses or prerequisite courses that have already counted towards the Rhythmic/Percussive Dance Technique requirement may not also count towards the Technique Electives.
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
• DNCE 1040 - Modern Dance Partnering Technique (1.0 cr)
• DNCE 1301 - Tap Technique 1 (1.0 cr)
• DNCE 1302 - Tap Technique 2 (1.0 cr)
• DNCE 1313 - African Based Movement (1.0 cr)
• DNCE 1327 - Argentine Tango (1.0 cr)
• DNCE 1331 - Yoga (1.0 cr)
• DNCE 1335 - T'ai Chi Ch'uan (1.0 cr)
• DNCE 1343 - Urban & Street Dance Forms 1: Introduction (1.0 cr)
• DNCE 1349 - Contact Improvisation (1.0 cr)
• DNCE 1351 - African Diasporic Movement 1 (1.0 cr)
• DNCE 1353 - African Diasporic Movement 3 (1.0 cr)
• DNCE 1354 - African Diasporic Movement 4 (1.0 cr)
• DNCE 3301 - Tap Technique 3 (1.0 cr)
• DNCE 3302 - Tap Technique 4 (1.0 cr)
• DNCE 3351 - African Diasporic Movement 5 (1.0 cr)
• DNCE 3352 - African Diasporic Movement 6 (1.0 cr)
• DNCE 5110 - Ballet Technique 7 (1.0 cr)
• DNCE 5120 - Ballet Technique 8 (1.0 cr)

Capstone
The dance program offers a flexible capstone course which allow its majors to pursue final projects under the guidance of faculty mentors in the three focus areas of our program: performance, creation or intellectual endeavor or some combination of the three. Examples are the production of evenings of performance, arts administration internships, research papers, collaborative projects with other student artists and scholars within and beyond the field of dance.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major are still required to take the Dance BFA capstone.
• DNCE 4901 - Capstone Seminar for Dance (1.0 - 2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
• AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
• AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
• DNCE 3401W - Dance History 1 [GP, WI] (3.0 cr)
• DNCE 3402W - Dance History 2 [WI] (3.0 cr)
• DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
• AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [WI] (3.0 cr)
or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
Twin Cities Campus

Developmental Psychology B.A.

Institute of Child Development

College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 37 to 42
• Degree: Bachelor of Arts

Developmental psychology (formerly child psychology) focuses on behavioral development from the prenatal period to maturity. Students complete coursework in topic areas including social development, cognitive development, language development, emotional and behavioral disorders, biological development, and research methods. The Institute of Child Development offers a bachelor of arts (BA), a bachelor of science (BS), and a minor in developmental psychology through the College of Liberal Arts (CLA). Majors may not receive a second major or second baccalaureate degree in psychology.

Program Delivery

This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 1 course(s) before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Introduction to Child Psychology

This requirement may be in progress in order to declare the major.

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• CPSY 2301 - Introduction to Child Psychology [SOCS] (4.0 cr)
or CPSY 3301 - Introduction to Child Psychology [SOCS] (4.0 cr)

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the developmental psychology BA is CPSY.

Students may earn no more than one undergraduate degree in developmental psychology: a BA, a BS, or a minor. Students may combine the BA in developmental psychology with the minor in psychology. CPSY majors may not also earn a second major or baccalaureate degree in psychology.

At least 12 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses

Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:

Social Development

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CPSY 4331 - Social and Personality Development (3.0 cr)
### Cognitive Development
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4341 - Perceptual Development (3.0 cr)
- CPSY 4343 - Cognitive Development (3.0 cr)
- CPSY 4345 - Language Development and Communication (3.0 cr)

### Biological Development
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4329 - Biological Foundations of Development (3.0 cr)

### Statistical Analysis and Research Methods
Take exactly 2 course(s) totaling 7 - 8 credit(s) from the following:
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
  or SOC 3811 - Social Statistics [MATH] (4.0 cr)
  or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)

### Developmental Contexts and Applications
Topics course must be taken for at least 3 credits to count toward this requirement. Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- CPSY 1334 - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
- CPSY 3601 - Introduction to Child Life Theory and Practice (3.0 cr)
- CPSY 4310 - Special Topics in Developmental Psychology (1.0 - 4.0 cr)
- CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 cr)

### Experiential Courses
Take 2 or more credit(s) from the following:
- CPSY 3896 - Internship in Child Psychology (1.0 - 4.0 cr)
- CPSY 4994 - Directed Research in Developmental Psychology (1.0 - 4.0 cr)

### Electives
No single course may count twice in the major. Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- CPSY 1301 - Nature-Based Learning in Early Childhood (3.0 cr)
- CPSY 313A - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
- CPSY 2310 - Special Topics in Child Development (1.0 - 4.0 cr)
- CPSY 3601 - Introduction to Child Life Theory and Practice (3.0 cr)
- CPSY 4302 - Infant Development (3.0 cr)
- CPSY 4303 - Adolescent Psychology (3.0 cr)
- CPSY 4310 - Special Topics in Developmental Psychology (1.0 - 4.0 cr)
- CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
- CPSY 4329 - Biological Foundations of Development (3.0 cr)
- CPSY 4331 - Social and Personality Development (3.0 cr)
- CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)
- CPSY 4341 - Perceptual Development (3.0 cr)
- CPSY 4343 - Cognitive Development (3.0 cr)
- CPSY 4345 - Language Development and Communication (3.0 cr)
- CPSY 5241 - Practicum in Early Childhood Education (3.0 cr)
- CPSY 5251W - Social and Philosophical Foundations of Early Childhood Education [WI] (3.0 cr)

### Experiential Electives
If selected as an elective, take no more than 3 credits combined from either of the following courses.
Take 0 - 3 credit(s) from the following:
- CPSY 3896 - Internship in Child Psychology (1.0 - 4.0 cr)
- CPSY 4994 - Directed Research in Developmental Psychology (1.0 - 4.0 cr)

### Capstone in Developmental Psychology
The purpose of the Capstone is to bring together important themes and concepts that students have learned about throughout their undergraduate experience. Students will use that knowledge to find and coherently summarize the intersection of a topic of their choosing with a key developmental topic focused on in this course.

**Capstone**
Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Developmental Psychology capstone, but they do need to replace the 3 credits with another CPSY elective course. Double majors
whose second major is outside of CLA are required to complete the Developmental Psychology capstone.

**Non-Honors Sequence**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4347W - Child Psychology Capstone [WI] (3.0 cr)

**Honors Sequence**
Honors students seeking to complete the honors thesis in developmental psychology should follow this sequence. Students should take CPSY 3360H in the fall of their junior year. Students must take at least 3 credits of CPSY 4994V, but it is typically taken twice for 2 credits each time, in the fall and spring of a student's senior year.
Take 2 or more course(s) totaling 4 - 6 credit(s) from the following:
- CPSY 3360H - Child Psychology Honors Seminar (2.0 cr)
- CPSY 4994V - Directed Research in Child Psychology (Honors Thesis) [WI] (1.0 - 6.0 cr)

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
- CPSY 4347W - Child Psychology Capstone [WI] (3.0 cr)
- CPSY 4994V - Directed Research in Child Psychology (Honors Thesis) [WI] (1.0 - 6.0 cr)
Twin Cities Campus
Developmental Psychology B.S.
Institute of Child Development
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 51 to 57
- Degree: Bachelor of Science

Developmental psychology (formerly child psychology) focuses on behavioral development from the prenatal period to maturity. Students complete coursework in topic areas including social development, cognitive development, language development, emotional and behavioral disorders, biological development, and research methods. The Institute of Child Development offers a bachelor of arts (BA), a bachelor of science (BS), and a minor in developmental psychology through the College of Liberal Arts (CLA). Majors may not receive a second major or second baccalaureate degree in psychology.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introduction to Child Psychology
This requirement may be in progress in order to declare the major.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- CPSY 2301 - Introduction to Child Psychology [SOCS] (4.0 cr)
or CPSY 3301 - Introduction to Child Psychology [SOCS] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students may earn no more than one undergraduate degree in developmental psychology: a BA, a BS, or a minor. Students may combine the BS in developmental psychology with the minor in psychology. CPSY majors may not also earn a second major or baccalaureate degree in Psychology.

At least 12 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

General Psychology
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

Core Courses
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
Social Development
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4331 - Social and Personality Development (3.0 cr)
- CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)
- Cognitive Development
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- CPSY 4341 - Perceptual Development (3.0 cr)
- CPSY 4343 - Cognitive Development (3.0 cr)
- CPSY 4345 - Language Development and Communication (3.0 cr)

**Biological Development**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4329 - Biological Foundations of Development (3.0 cr)

**Statistical Analysis and Research Methods**
Take exactly 2 course(s) totaling 7 - 8 credit(s) from the following:
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)

**Developmental Contexts and Applications**
Topics course must be taken for at least 3 credits to count toward this requirement.
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:
- CPSY 1334 - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
or CPSY 3601 - Introduction to Child Life Theory and Practice (3.0 cr)
or CPSY 4310 - Special Topics in Developmental Psychology (1.0 - 4.0 cr)
or CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
or CPSY 4313W - Disabilities and Development [WI] (4.0 cr)

**Directed Research**
Take 2 - 6 course(s) totaling exactly 6 credit(s) from the following:
- CPSY 4994 - Directed Research in Developmental Psychology (1.0 - 4.0 cr)

**Electives**
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- CPSY 1301 - Nature-Based Learning in Early Childhood (3.0 cr)
- CPSY 1334 - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
- CPSY 2310 - Special Topics in Child Development (1.0 - 4.0 cr)
- CPSY 3601 - Introduction to Child Life Theory and Practice (3.0 cr)
- CPSY 4302 - Infant Development (3.0 cr)
- CPSY 4303 - Adolescent Psychology (3.0 cr)
- CPSY 4310 - Special Topics in Developmental Psychology (1.0 - 4.0 cr)
- CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
- CPSY 4329 - Biological Foundations of Development (3.0 cr)
- CPSY 4331 - Social and Personality Development (3.0 cr)
- CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)
- CPSY 4341 - Perceptual Development (3.0 cr)
- CPSY 4343 - Cognitive Development (3.0 cr)
- CPSY 4345 - Language Development and Communication (3.0 cr)
- CPSY 5241 - Practicum in Early Childhood Education (3.0 cr)
- CPSY 5251W - Social and Philosophical Foundations of Early Childhood Education [WI] (3.0 cr)
- CPSY 4347W - Child Psychology Capstone [WI] (3.0 cr)

**Internship in Child Psychology**
Must be taken for exactly 3 credits to count toward this requirement.
Take 0 - 1 course(s) totaling 0 - 3 credit(s) from the following:
- CPSY 3896 - Internship in Child Psychology (1.0 - 4.0 cr)

**Capstone**
The purpose of the Capstone is to bring together important themes and concepts that students have learned about throughout their undergraduate experience. Students will use that knowledge to find and coherently summarize the intersection of a topic of their choosing with a key developmental topic focused on in this course.
Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Developmental Psychology capstone, but they do need to replace the 3 credits with another CPSY elective course. Double majors whose second major is outside of CLA are required to complete the Developmental Psychology capstone.

**Non-Honors Sequence**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4347W - Child Psychology Capstone [WI] (3.0 cr)

**Honors Sequence**
Honors students seeking to complete the honors thesis in developmental psychology should follow this sequence. Students should
take CPSY 3360H in the fall of their junior year. Students must take at least 3 credits of CPSY 4994V, but it is typically taken twice for 2 credits each time, in the fall and spring of a student's senior year. 
Take 2 or more course(s) totaling 4 - 6 credit(s) from the following:
• CPSY 3360H - Child Psychology Honors Seminar (2.0 cr)
• CPSY 4994V - Directed Research in Child Psychology (Honors Thesis) [WI] (1.0 - 6.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)
• CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
• CPSY 4347W - Child Psychology Capstone [WI] (3.0 cr)
• CPSY 4994V - Directed Research in Child Psychology (Honors Thesis) [WI] (1.0 - 6.0 cr)
Twin Cities Campus
Developmental Psychology Minor
CLA Dean's Office
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

Developmental psychology (formerly child psychology) studies behavioral development across the lifespan. Complete coursework in topic areas including social and emotional development, cognitive development, language development, emotional and behavioral disorders, and biological development. Supplement your major by gaining expertise in child development, and prepare for graduate study or a meaningful career in a field that impacts the lives of children, youth, and families. The Institute of Child Development offers a bachelor of arts (BA), a bachelor of science (BS), and a minor in developmental psychology through the College of Liberal Arts (CLA).

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introduction to Child Psychology
This requirement may be in progress in order to declare the minor.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• CPSY 2301 - Introduction to Child Psychology [SOCS] (4.0 cr)
or CPSY 3301 - Introduction to Child Psychology [SOCS] (4.0 cr)

Minor Requirements
Students may earn no more than one undergraduate degree in Developmental Psychology: a BA, a BS, or a minor. Students may combine the Developmental Psychology minor with the BA or the BS in Psychology.

Core Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
Social Development
Take 0 - 1 course(s) from the following:
• CPSY 4331 - Social and Personality Development (3.0 cr)
• CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)

• Cognitive Development
Take 0 - 1 course(s) from the following:
• CPSY 4341 - Perceptual Development (3.0 cr)
• CPSY 4343 - Cognitive Development (3.0 cr)
• CPSY 4345 - Language Development and Communication (3.0 cr)

• Biological Development
Take 0 - 1 course(s) from the following:
• CPSY 4329 - Biological Foundations of Development (3.0 cr)

Electives
No single course may count twice in the minor.
Take 9 or more credit(s) from the following:
• CPSY 1301 - Nature-Based Learning in Early Childhood (3.0 cr)
• CPSY 1334 - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
• CPSY 2310 - Special Topics in Child Development (1.0 - 4.0 cr)
• CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)
• CPSY 3601 - Introduction to Child Life Theory and Practice (3.0 cr)
• CPSY 4302 - Infant Development (3.0 cr)
• CPSY 4303 - Adolescent Psychology (3.0 cr)
• CPSY 4310 - Special Topics in Developmental Psychology (1.0 - 4.0 cr)
• CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
• CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
• CPSY 4329 - Biological Foundations of Development (3.0 cr)
• CPSY 4331 - Social and Personality Development (3.0 cr)
• CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)
• CPSY 4341 - Perceptual Development (3.0 cr)
• CPSY 4343 - Cognitive Development (3.0 cr)
• CPSY 4345 - Language Development and Communication (3.0 cr)

• Experiential Electives
  If selected as an elective, take no more than 3 credits combined from either of the following courses.
  Take 0 - 3 credit(s) from the following:
  • CPSY 3896 - Internship in Child Psychology (1.0 - 4.0 cr)
  • CPSY 4994 - Directed Research in Developmental Psychology (1.0 - 4.0 cr)
Twin Cities Campus
Digital Media Studies Minor
School of Journalism & Mass Communication
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

This interdisciplinary minor explores multiple perspectives of how information or content is created and shaped in digital media, as well as the role and impact of those media on human communication. Students will have an understanding of how digital media change the ways in which various types of content can be created, managed, and distributed and, in doing so, potentially change the content itself.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
No more than two courses for a maximum of 6 credits can be earned from a single course designator.

Students completing a Hubbard School of Journalism & Mass Communication major may only count one JOUR course (3 credits) towards the digital media studies minor. As a result, Hubbard majors must complete four elective courses (12 credits) to complete the required minimum of 15 credits for the minor.

Core Courses
Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:
- JOUR 1501 - Digital Games and Society [AH, TS] (3.0 cr)
- JOUR 3551 - The Business of Digital Media: Innovation, Disruption, and Adaptation [TS] (3.0 cr)
- JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
- JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
- JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
- JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)

Electives
Take 3 - 4 course(s) totaling 9 - 12 credit(s) from the following:
- ARTS 3240 - Making Art Interactive (4.0 cr)
- COMM 3211 - Introduction to Media Studies (3.0 cr)
- COMM 4291 - New Telecommunication Media (3.0 cr)
- COMM 5231 - Media Outlaws (3.0 cr)
- CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
- CSL 3334 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
- DES 3131 - User Experience in Design (4.0 cr)
- DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
- ENGL 4722 - Alphabet to Internet: History of Writing Technologies (3.0 cr)
- HECU 3555W - Making Media & Change: Digital Technologies, Storytelling, and Activism From Consumers to Creators [AH, CIV, WI] (4.0 cr)
- HSCI 3715 - History of Modern Technology: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
- SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
- SCMC 3201 - Fundamentals of Digital Filmmaking (4.0 cr)
- SCMC 3202 - Intermediate Digital Filmmaking (4.0 cr)
- TH 4555 - Audio Technology (3.0 cr)
- WRIT 3371W - Technology, Self, and Society [TS, WI] (3.0 cr)
- WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
- WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
- WRIT 4501 - Usability and Human Factors in Technical Communication (3.0 cr)
- ARCH 3611 - Design in the Digital Age (3.0 cr)
  or ARCH 5611 - Design in the Digital Age (3.0 cr)
- ARTS 3760 - Experimental Film and Video (4.0 cr)
  or ARTS 5760 - Experimental Film and Video (4.0 cr)
• ARTS 3770 - Animation (4.0 cr)
  or ARTS 5770 - Animation (4.0 cr)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
  or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
• CSCL 3221 - On Television [CIV] (3.0 cr)
  or SCMC 3221 - On Television [CIV] (3.0 cr)
• HIST 1842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
  or HIST 3842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
• HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
  or HSCI 5331 - Technology and American Culture (3.0 cr)
• PHIL 4615 - Minds, Bodies, and Machines (3.0 cr)
  or PHIL 5615 - Mind, Bodies and Machines (3.0 cr)
• WRIT 4662W - Writing With Digital Technologies [WI] (3.0 cr)
  or WRIT 5662 - Writing With Digital Technologies (3.0 cr)
**Twin Cities Campus**

**Dutch Studies Minor**

*German, Nordic, Slavic & Dutch*

**College of Liberal Arts**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 35

Learning Dutch opens a window to the creative, ethical, and moral debates of our times. Dutch Studies minors will learn to investigate and explore questions such as: How did the Netherlands become a model for the political, social, and economic revolutions that shaped our contemporary world? How has the Dutch-speaking world had such an enormous impact on global business, the politics of health care, environmental policy, international law, the fine arts, and architecture? Opportunities exist for continuing and perfecting your Dutch through further study in the Netherlands or Dutch-speaking Belgium.

Dutch studies minors have pursued careers in business, international law and politics, natural resources management, and the arts.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**Required prerequisites**

**Beginning and Intermediate Dutch**

These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.

Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- **DTCH 1001** - Beginning Dutch (5.0 cr)
- **DTCH 1002** - Beginning Dutch (5.0 cr)
- **DTCH 1003** - Intermediate Dutch (5.0 cr)
- **DTCH 1004** - Intermediate Dutch (5.0 cr)

**Minor Requirements**

Students are required to take 4 semester(s) of Dutch.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota Twin Cities campus. In the Dutch Studies minor, this does not include learning abroad courses taken for resident credit.

Students with a German, Scandinavian, Dutch major may elect a minor in Dutch Studies, but no courses may count for both the major and the minor.

**Conversation and Composition**

Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- **DTCH 3011W** - Conversation and Composition [WI] (3.0 cr)
- **DTCH 3012** - Conversation and Composition (3.0 cr)

**Electives**

Up to two electives from other departments may be applied to the Dutch studies minor after consultation with the department's director of undergraduate studies.

Take 9 or more credit(s) from the following:
- **DTCH 3xxx**
- **DTCH 5xxx**
- **Directed Study**

Take 0 - 1 course(s) from the following:
- **DTCH 3993** - Directed Studies (1.0 - 5.0 cr)
- **DTCH 5993** - Directed Studies (1.0 - 4.0 cr)
**Twin Cities Campus**

**Earth Sciences B.A.**  
*Department of Earth Sciences*  
*College of Liberal Arts*

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2020  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 65  
- This program requires summer terms.  
- Degree: Bachelor of Arts

Earth sciences is the study of the composition, structure, and history of the Earth, as well as the processes that operate on and within it. Emphasis on the crust, oceans, and atmosphere. The BA prepares students for graduate study or professional employment.

Earth scientists are employed in a wide range of fields, including exploration for and development of natural resources, environmental science, urban planning, education, oceanography, and other areas related to natural science. Potential employers include the oil, gas, and minerals industries, environmental consultants, federal and private research institutions, universities, schools, and government agencies. An advanced degree is usually required for a career in research or teaching.

**Program Delivery**  
This program is available:  
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**  
A GPA above 2.0 is preferred for the following:  
- 2.50 transferring from outside the University

Students interested in Earth Sciences as a major may want to consider taking one of these courses with a lab: ESCI 1001, 1005, 1006, or 1007.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**General Requirements**  
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**  
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Earth Sciences BA is ESCI.

At least 20 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may complete no more than one degree in the Earth Sciences program: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Mathematics**  
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:  
- MATH 1271 - Calculus I [MATH] (4.0 cr)  
  - or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)  
  - or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)  
- MATH 1272 - Calculus II (4.0 cr)  
  - or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)

Physics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
- PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
- PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Chemistry
Take exactly 4 course(s) totaling exactly 8 credit(s) from the following:

Chemical Principles I
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Chemical Principles II
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
- CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Core Courses
Take exactly 7 course(s) totaling exactly 25 credit(s) from the following:
- ESCI 2201 - Solid Earth Dynamics (4.0 cr)
- ESCI 2202 - Earth History (4.0 cr)
- ESCI 2203 - Earth Surface Dynamics (4.0 cr)
- ESCI 2301 - Mineralogy (3.0 cr)
- ESCI 3202 - Fluid Earth Dynamics (4.0 cr)
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
- ESCI 3891 - Field Methods (2.0 cr)

Introductory Field Geology
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- ESCI 3911 - Introductory Field Geology (4.0 cr)

Electives
ESCI 2302, 4501, and 4602 are strongly recommended for satisfying the elective credits.
Take 8 or more credit(s) from the following:
- ESCI 2302 - Petrology (3.0 cr)
- ESCI 3004 - Water and Society [ENV] (3.0 cr)
- ESCI 3005 - Earth Resources (3.0 cr)
- ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
- ESCI 3093 - Directed Studies in Earth & Environmental Sciences: Junior (1.0 - 4.0 cr)
- ESCI 3890 - Field Workshop (1.0 cr)
- ESCI 4010 - Undergraduate Seminar: Current Topics in Earth & Environmental Sciences (1.0 - 4.0 cr)
- ESCI 4093 - Directed Studies in Earth & Environmental Sciences: Senior (1.0 - 4.0 cr)
- ESCI 4094 - Senior Thesis (2.0 cr)
- ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- ESCI 4203 - Environmental Geophysics (3.0 cr)
- ESCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
- ESCI 4211 - Solid Earth Geophysics I (3.0 cr)
- ESCI 4212 - Solid Earth Geophysics II (3.0 cr)
- ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
- ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
- ESCI 4501 - Structural Geology (3.0 cr)
- ESCI 4502 - Tectonic Styles (3.0 cr)
- ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
- ESCI 4702 - General Hydrogeology (4.0 cr)
- ESCI 4703 - Glacial Geology (4.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- ESCI 5201 - Time-Series Analysis of Geological Phenomena (3.0 cr)
- ESCI 5203 - Mineral and Rock Physics (3.0 cr)
• ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
• ESCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
• ESCI 5402 - Science and Politics of Global Warming [ENV] (3.0 cr)

Capstone
These field-based courses provide students with an opportunity to apply knowledge obtained in the classroom to practical real-world problems likely to be encountered as professional geoscientists. Both courses require students to make original observations and interpretations while they are outside in the field regarding advanced geologic mapping (ESCI 4911) and hydrogeologic methods (ESCI 4971W).

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the Earth Sciences BA capstone.

• ESCI 4911 - Advanced Field Geology (4.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
• ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
Twin Cities Campus
Earth Sciences Minor
CLA Dean's Office
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 18

Earth science is the study of the composition, structure, and history of the Earth and of the processes that operate on and within it, with emphasis on the crust, oceans, and atmosphere.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may complete no more than one degree in the Earth Sciences program: a BA or a BS or a minor.

Foundation Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- E SCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
  - or E SCI 1005 - Geology and Cinema [PHYS, ENV] (4.0 cr)
  - or E SCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
  - or E SCI 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)

Electives
Take 14 or more credit(s) from the following:
- E SCI 2302 - Petrology (3.0 cr)
- E SCI 3004 - Water and Society [ENV] (3.0 cr)
- E SCI 3005 - Earth Resources (3.0 cr)
- E SCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
- E SCI 3093 - Directed Studies in Earth & Environmental Sciences: Junior (1.0 - 4.0 cr)
- E SCI 3890 - Field Workshop (1.0 cr)
- E SCI 4010 - Undergraduate Seminar: Current Topics in Earth & Environmental Sciences (1.0 - 4.0 cr)
- E SCI 4093 - Directed Studies in Earth & Environmental Sciences: Senior (1.0 - 4.0 cr)
- E SCI 4094 - Senior Thesis (2.0 cr)
- E SCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- E SCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- E SCI 4203 - Environmental Geophysics (3.0 cr)
- E SCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
- E SCI 4211 - Solid Earth Geophysics I (3.0 cr)
- E SCI 4212 - Solid Earth Geophysics II (3.0 cr)
- E SCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
- E SCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
- E SCI 4501 - Structural Geology (3.0 cr)
- E SCI 4502 - Tectonic Styles (3.0 cr)
- E SCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- E SCI 4701 - Geomorphology (4.0 cr)
- E SCI 4702 - General Hydrogeology (4.0 cr)
- E SCI 4703 - Glacial Geology (4.0 cr)
- E SCI 4801 - Geomicrobiology (3.0 cr)
- E SCI 5201 - Time-Series Analysis of Geological Phenomena (3.0 cr)
- E SCI 5203 - Mineral and Rock Physics (3.0 cr)
- E SCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
- E SCI 5302 - Isotope Geology (3.0 cr)
- E SCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
- E SCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
- E SCI 5503 - Advanced Petrology (3.0 cr)
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<th>Course Code</th>
<th>Course Title</th>
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Twin Cities Campus

Econometrics Minor

Economics

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 46 to 48

The Econometrics minor appeals to students who plan to pursue careers related to Mathematics, Statistics, and Data Science. The minor will give students the ability to work with economic data, use estimation techniques to prove or disprove their hypothesis, and draw conclusions. Data analysis is a highly marketable skill.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Principles of Micro and Macroeconomics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
• ECON 1102 - Principles of Macroeconomics (4.0 cr)

Calculus I
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Minor Requirements
Students may receive no more than one undergraduate degree from the Department of Economics: a BA or a BS or a minor.

Core Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ECON 3101 - Intermediate Microeconomics (4.0 cr)

Mathematics
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
  Calculus II
  • MATH 1272 - Calculus II (4.0 cr)
  or MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)
  • Linear Algebra and Differential Equations
    • MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
    or MATH 2374 - CSE Linear Algebra and Differential Equations (4.0 cr)
    or MATH 2574H - Honors Calculus IV (4.0 cr)
  • Multivariable Calculus
    • MATH 2263 - Multivariable Calculus (4.0 cr)
    or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)

Statistics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
Option 1
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
- Option 2
STAT 5101 - Theory of Statistics I (4.0 cr)  
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)  
STAT 5102 - Theory of Statistics II (4.0 cr)  
or MATH 5652 - Introduction to Stochastic Processes (4.0 cr)  

Econometrics  
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:  
• ECON 4261 - Introduction to Econometrics (4.0 cr)  

Electives  
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:  
• ECON 4115 - Uncertainty and Information (4.0 cr)  
• ECON 4118 - Advanced Mathematical Economics (4.0 cr)  
• ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)  
• ECON 4751 - Financial Economics (3.0 cr)  
• ECON 4831 - Cost-Benefit Analysis (3.0 cr)
Twin Cities Campus
Economics - Quantitative Emphasis B.A.
Economics
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 53
- Degree: Bachelor of Arts

The Bachelors of Arts in Economics gives students the economic and analytical tools necessary to examine and solve contemporary economic problems. This major pathway adds quantitative training in calculus, linear algebra, and econometrics. For more information, visit https://cla.umn.edu/economics

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 4 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Coursework
Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:

**Principles of Micro and Macroeconomics**
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)

**Calculus I**
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

**Calculus II**
- MATH 1272 - Calculus II (4.0 cr)
  or MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Economics - Quantitative Emphasis BA is ECON.

Supporting work in computer science, mathematics, and statistics is recommended.

At least 17 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. At least 6 of the 8 upper-division ECON courses must be taken from the Department of Economics at the University of Minnesota Twin Cities campus.

Students may receive no more than one undergraduate degree from the Department of Economics: a BA, BA-Q, BS or a minor.
All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 6 course(s) totaling exactly 23 credit(s) from the following:
- **ECON 3101 - Intermediate Microeconomics (4.0 cr)**
- **ECON 3102 - Intermediate Macroeconomics (4.0 cr)**
- **ECON 4211 - Principles of Econometrics (4.0 cr)**
- **MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)**
- **STAT 3021 - Introduction to Probability and Statistics (3.0 cr)**
- **STAT 3022 - Data Analysis (4.0 cr)**
  - or **STAT 3032 - Regression and Correlated Data (4.0 cr)**

Electives
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
- **ECON 3970 - Topics in Economics (3.0 cr)**
- **ECON 4115 - Uncertainty and Information (4.0 cr)**
- **ECON 4331W - Economic Development [WI] (3.0 cr)**
- **ECON 4431W - International Trade [GP, WI] (3.0 cr)**
- **ECON 4432W - International Finance [WI] (3.0 cr)**
- **ECON 4531 - Labor Economics (3.0 cr)**
- **ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)**
- **ECON 4721 - Money and Banking (3.0 cr)**
- **ECON 4751 - Financial Economics (3.0 cr)**
- **ECON 4821 - Public Economics (3.0 cr)**
- **ECON 4831 - Cost-Benefit Analysis (3.0 cr)**
- **ECON 4860 - Topics in Economics (4.0 cr)**

Area Study Courses
Only one country/area study course or department-approved study-abroad course may count toward the elective requirement. Take no more than 1 course(s) from the following:
- **ECON 3960 - Topics in Economics: Area Studies (3.0 cr)**
- **ECON 4311 - Economy of Latin America (3.0 cr)**
- **ECON 4317 - The Chinese Economy (3.0 cr)**

Independent Study
Take at most 3 credit(s) from the following:
- **ECON 3991 - Independent Study (1.0 - 3.0 cr)**

Capstone
In the capstone, students demonstrate that they can think critically and define an economic issue; review relevant literature; gather, recognize, and interpret data; use economic theory and statistical tools to analyze economic problems; interpret and communicate findings; and attain understanding and proficiency in the modes of inquiry common to the discipline. Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Economics-Quantitative Emphasis B.A. capstone, and they do not need to replace the 2 credits.

**Capstone Seminar**
**ECON 3951 - Economics Capstone (2.0 cr)**

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- **ECON 4331W - Economic Development [WI] (3.0 cr)**
- **ECON 4431W - International Trade [GP, WI] (3.0 cr)**
- **ECON 4432W - International Finance [WI] (3.0 cr)**
Twin Cities Campus
Economics B.A.
Economics
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 47 to 48
- Degree: Bachelor of Arts

The Bachelors of Arts in Economics gives students the economic and analytical tools necessary to examine and solve contemporary economic problems. For more information, visit https://cla.umn.edu/economics

Program Delivery
This program is available:
* via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 3 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Coursework
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:

Principles of Micro and Macroeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)

Calculus I
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Economics BA is ECON.

Supporting work in computer science, mathematics, and statistics is recommended.

At least 20 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. At least 7 of the 9 upper-division upper-division ECON courses must be taken from the Department of Economics at the University of Minnesota Twin Cities campus.

Students may receive no more than one undergraduate degree from the Department of Economics: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 4 course(s) totaling 15 - 16 credit(s) from the following:
•ECON 3101 - Intermediate Microeconomics (4.0 cr)
  ECON 3102 - Intermediate Macroeconomics (4.0 cr)
•STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
•STAT 3022 - Data Analysis (4.0 cr)
  or STAT 3032 - Regression and Correlated Data (4.0 cr)

Electives
Take exactly 6 course(s) totaling 18 or more credit(s) from the following:
•ECON 3970 - Topics in Economics (3.0 cr)
•ECON 4115 - Uncertainty and Information (4.0 cr)
•ECON 4211 - Principles of Econometrics (4.0 cr)
•ECON 4331W - Economic Development [WI] (3.0 cr)
•ECON 4431W - International Trade [GP, WI] (3.0 cr)
•ECON 4432W - International Finance [WI] (3.0 cr)
•ECON 4531 - Labor Economics (3.0 cr)
•ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
•ECON 4721 - Money and Banking (3.0 cr)
•ECON 4751 - Financial Economics (3.0 cr)
•ECON 4821 - Public Economics (3.0 cr)
•ECON 4831 - Cost-Benefit Analysis (3.0 cr)
•ECON 4960 - Topics in Economics (4.0 cr)

•Area Study Courses
  Only one country/area study course or department-approved study-abroad course may count toward the elective requirement.
  Take no more than 1 course(s) from the following:
  •ECON 3960 - Topics in Economics: Area Studies (3.0 cr)
  •ECON 4311 - Economy of Latin America (3.0 cr)
  •ECON 4317 - The Chinese Economy (3.0 cr)

•Independent Study
  Take at most 3 credit(s) from the following:
  •ECON 3991 - Independent Study (1.0 - 3.0 cr)

Capstone
In the capstone, students demonstrate that they can think critically and define an economic issue; review relevant literature; gather, recognize, and interpret data; use economic theory and statistical tools to analyze economic problems; interpret and communicate findings; and attain understanding and proficiency in the modes of inquiry common to the discipline.
Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Economics B.A. capstone, and they do not need to replace the 2 credits.

Capstone Seminar
  ECON 3951 - Economics Capstone (2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
•ECON 4331W - Economic Development [WI] (3.0 cr)
•ECON 4432W - International Finance [WI] (3.0 cr)
•ECON 4431W - International Trade [GP, WI] (3.0 cr)
Twin Cities Campus
Economics B.S.
Economics
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 64 to 68
• Degree: Bachelor of Science

The Bachelors of Science in Economics gives students the economic, mathematical, and analytical tools to solve contemporary economic problems. This major pathway is recommended for students considering graduate studies in economics or pursuing a career as a professional economist or in an analytics-based field. For more information, visit https://cla.umn.edu/economics

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 4 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Coursework
Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:

Principles of Micro and Macroeconomics
• ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  ECON 1102 - Principles of Macroeconomics (4.0 cr)
• Calculus I
  • MATH 1271 - Calculus I [MATH] (4.0 cr)
    or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
    or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
• Calculus II
  • MATH 1272 - Calculus II (4.0 cr)
    or MATH 1572H - Honors Calculus II (4.0 cr)
    or MATH 1372 - CSE Calculus II (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Economics BA is ECON.

Supporting work in computer science, mathematics, and statistics is recommended.

At least 24 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. At least 7 of the 9 upper-division ECON courses must be taken from the Department of Economics at the University of Minnesota Twin Cities campus.

Students may receive no more than one undergraduate degree from the Department of Economics: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.
Core Courses
Take exactly 7 course(s) totaling exactly 28 credit(s) from the following:
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
- ECON 4261 - Introduction to Econometrics (4.0 cr)
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- Theory of Statistics I & II
  Take one of the following course pairs for a total of 8 credits:
  - STAT 4101 - Theory of Statistics I (4.0 cr)
  - STAT 4102 - Theory of Statistics II (4.0 cr)
or
  - STAT 5101 - Theory of Statistics I (4.0 cr)
  - STAT 5102 - Theory of Statistics II (4.0 cr)

Electives
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:
- ECON 3970 - Topics in Economics (3.0 cr)
- ECON 4115 - Uncertainty and Information (4.0 cr)
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4432W - International Finance [WI] (3.0 cr)
- ECON 4531 - Labor Economics (3.0 cr)
- ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
- ECON 4721 - Money and Banking (3.0 cr)
- ECON 4751 - Financial Economics (3.0 cr)
- ECON 4821 - Public Economics (3.0 cr)
- ECON 4831 - Cost-Benefit Analysis (3.0 cr)
- ECON 4960 - Topics in Economics (4.0 cr)
- Area Study Courses
  Only one country/area study course or department-approved study abroad course may count toward the electives requirement.
  Take no more than 1 course(s) from the following:
  - ECON 3960 - Topics in Economics: Area Studies (3.0 cr)
  - ECON 4311 - Economy of Latin America (3.0 cr)
  - ECON 4317 - The Chinese Economy (3.0 cr)

Advanced Courses
The Microeconomic Analysis courses (ECON 416x) are quarter-long (7-week) courses meant to be taken in pairs.
Take 2 or more course(s) totaling 8 or more credit(s) from the following:
- ECON 4108 - Advanced Game Theory and Applications (4.0 cr)
- ECON 4118 - Advanced Mathematical Economics (4.0 cr)
- ECON 4438W - Advanced International Trade [GP, WI] (4.0 cr)
- ECON 4538 - Advanced Labor Economics (4.0 cr)
- ECON 4738 - Advanced Macroeconomic Policy (4.0 cr)
- ECON 4758 - Advanced Financial Economics (4.0 cr)
- ECON 4828 - Advanced Public Economics (4.0 cr)
- ECON 4970 - Advanced Topics: Economics (4.0 cr)
- ECON 4161 - Microeconomic Analysis I (2.0 cr)
- ECON 4162 - Microeconomic Analysis II (2.0 cr)
- ECON 4163 - Microeconomic Analysis III (2.0 cr)
- ECON 4164 - Microeconomic Analysis IV (2.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4432W - International Finance [WI] (3.0 cr)
- ECON 4438W - Advanced International Trade [GP, WI] (4.0 cr)
Twin Cities Campus
Economics Minor
Economics
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 29

Economics is a valuable minor for students majoring in business, engineering, statistics, computer science, mathematics, and social sciences. The goal is to support students in developing basic analytical skills to solve economic local and real-world problems.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 3 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Principles of Micro and Macroeconomics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)

Calculus I
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Minor Requirements
Students may receive no more than one undergraduate degree from the Department of Economics: a BA or a BS or a minor.

Core Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)

Electives
Take exactly 3 course(s) totaling 9 or more credit(s) from the following:
- ECON 3970 - Topics in Economics (3.0 cr)
- ECON 4211 - Principles of Econometrics (4.0 cr)
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4531 - Labor Economics (3.0 cr)
- ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
- ECON 4721 - Money and Banking (3.0 cr)
- ECON 4821 - Public Economics (3.0 cr)
- ECON 4831 - Cost-Benefit Analysis (3.0 cr)
- ECON 4960 - Topics in Economics (4.0 cr)

Country/Area Study
Take 0 - 1 course(s) totaling 0 - 3 credit(s) from the following:
- ECON 3960 - Topics in Economics: Area Studies (3.0 cr)
- ECON 4311 - Economy of Latin America (3.0 cr)
- ECON 4317 - The Chinese Economy (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Editing and Publishing Certificate
English Language & Literature
College of Liberal Arts

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 8 to 15

The Editing and Publishing Certificate provides students with the skills, knowledge, and experience necessary to enter the field of publishing. The certificate focuses particularly, but not exclusively, on literary publishing. Students take two required upper-division courses and complete an experiential learning requirement. The courses are designed to introduce students to the process, protocol, and philosophy of editing (including the conventions of grammar, story, and style), as well as the fundamentals of many other aspects of the publishing industry (including acquisitions and project management, design and printing, publicity and marketing, sales and distribution, fundraising and grant writing, copyright and permissions, and bookselling and book reviewing). The experiential learning requirement offers students an intensive, immersive experience in one or more aspects of editing and publishing, intended to prepare them for employment in the publishing industry as well as a wide range of related fields (including media outlets, NGOs, think tanks, advocacy groups, PR firms, foundations, government agencies, and institutions involved in cultural, artistic, educational, and community programming).

The certificate is open to all University of Minnesota undergraduate students.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 7 credits in the certificate must be taken at the University of Minnesota Twin Cities campus.

The Editing and Publishing Certificate may be combined with any departmental degree program (English B.A., English Minor, and/or Creative Writing Minor).

Core Courses
Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:
• ENGL 3704 - Introduction to Editing and Publishing (4.0 cr)
• ENGL 3714 - The Business of Publishing (3.0 cr)

Experiential Learning
Participate in an intensive university level experiential learning opportunity. There are two options for completing this requirement.

The Tower
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• ENGL 3711 - Literary Magazine Production Lab I (4.0 cr)
• ENGL 3712 - Literary Magazine Production Lab II (4.0 cr)

or Internship
Participate in an internship or other professional experience in editing and/or publishing. English Department advising staff will help students select appropriate experiences to pursue this option, all of which must be approved by the Director of Undergraduate Studies. Additional options for fulfilling this requirement could include a non-English Department internship, a Study Abroad internship, an internship through a HECUA program, or an internship through an ENGL service-learning course.
Take exactly 1 course(s) totaling 1 - 4 credit(s) from the following:
• ENGL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
Twin Cities Campus
English B.A.
English Language & Literature
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 34 to 35
• Degree: Bachelor of Arts

Students who major in English study literature and other forms of verbal expression, literary history and criticism, critical theory, linguistics, and creative writing. Courses offered by the department explore a wide range of discourses written in English, including poetry, drama, fiction, film, popular culture, and electronic media. Students examine the cultural, social, political, and economic contexts that condition a variety of texts. Majors write extensively and learn to express themselves effectively, both orally and in writing. They gain practical insight into the words that they speak, read, and write.

The English department supports an engaged, civic-oriented curriculum and teaches the critical skills of reading and writing in the context of community involvement and real public spheres by incorporating community and service-learning components into literature classes.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Prospective majors are encouraged to complete an introductory course in literature, creative writing, and/or English language, chosen from ENGL 1001-1701 and ENGW 1101-1104, before officially declaring the major. To declare a major, a student schedules an appointment with the Undergraduate Studies Office (227 Lind Hall; 612-625-4592; engmaj@umn.edu), and completes a Major Program form which is filed in CLA, the department, and with the student. Advisors recommend that students declare the major during the second semester of the freshman year.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the English BA is ENGL.

English majors are encouraged to study in other countries before their senior year, to increase understanding of English language and literatures from diverse cultural perspectives. Advanced planning facilitates academic success and progress. See the Learning Abroad Center Web site at www.UMabroad.umn.edu for more information.

English majors are also encouraged to incorporate courses that address racial, ethnic, gender, sexual, religious, economic, and ideological diversity. Diversity is part of the content of many English courses; see your departmental advisor for a list of ENGL courses that place diversity front-and-center.

All English courses completed at two-year community colleges are accepted as equivalent to University lower division (1xxx-level) courses, regardless of content. Advanced Placement (AP) and International Baccalaureate (IB) credits do not count towards the English BA.
Students may earn a bachelor of arts in English and a minor in creative writing, or a minor in English and a minor in creative writing. Students may not earn a BA in English and a minor in English. Only one course may count toward both the major and minor or toward both minors.

At least 5 upper division courses and 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Textual Analysis
The methods course provides skills in close and critical reading, background in history and culture, and multiple approaches to literary works.

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ENGL 3001W - Textual Analysis: Methods [WI] (4.0 cr)
  or ENGL 3001V - Honors: Textual Analysis: Methods [WI] (4.0 cr)

Shakespeare
A 3xxx Shakespeare course, together with the required historical literature courses, situates literary works in historical, cultural, and theoretical perspectives.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ENGL 3007 - Shakespeare [LITR] (3.0 cr)
  or ENGL 3007H - Honors: Shakespeare [LITR] (3.0 cr)
  or Department-approved Shakespeare course at the 3xxx-level.

American/British Surveys and Historically-oriented Literature
The surveys and historically-oriented literature courses, together with a 3xxx Shakespeare course, situate literary works in historical, cultural, and theoretical perspectives. A third survey may be used to satisfy the historically-oriented literature requirement. A course used to satisfy the historically-oriented literature requirement may not also satisfy an elective requirement.

Take 3 or more course(s) from the following:

American/British Surveys
Take both courses in Option I or Option II for a total of 2 courses and 8 credits.

Option I
ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
ENGL 3006W - Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)
  or ENGL 3006V - Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)

Option II
ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)

Historically-oriented Literature
Take 1 or more course(s) from the following:
• ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
• ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
• ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)
• ENGL 3026 - Mediterranean Wanderings: Literature and History on the Borders of Three Continents [GP] (3.0 cr)
• ENGL 3092 - The Original Walking Dead: Misbehaving Dead Bodies in the 19th Century [LITR] (3.0 cr)
• ENGL 3101 - Survey of Medieval English Literature (3.0 cr)
• ENGL 3134 - Milton and Rebellion (3.0 cr)
• ENGL 3141 - The Restoration and the Eighteenth Century: Sex, Satire, and Sentiment (3.0 cr)
• ENGL 3151 - Romantic Literatures and Cultures (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
• ENGL 3182 - Irish Literature (3.0 cr)
• ENGL 3212 - American Poetry from 1900 (3.0 cr)
• ENGL 3221 - American Novel to 1900 (3.0 cr)
• ENGL 3222 - American Novel from 1900 (3.0 cr)
• ENGL 3231 - American Drama (3.0 cr)
• ENGL 4152 - Nineteenth Century Beckett Novel (3.0 cr)
• ENGL 4233 - Modern and Contemporary Drama (3.0 cr)
• ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 3006W - Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)
  or ENGL 3006V - Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)
• ENGL 3025 - The End of the World in Literature and History [HIS] (3.0 cr)
  or RELS 3627 - The End of the World in Literature and History [HIS] (3.0 cr)
• ENGL 3101 - Survey of Medieval English Literature (3.0 cr)
  or MEST 3101 - Survey of Medieval English Literature (3.0 cr)
• ENGL 3102 - Chaucer (3.0 cr)
  or MEST 3102 - Chaucer (3.0 cr)
• ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  or AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
  or CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
• ENGL 3593 - The African American Novel (3.0 cr)
  or ENGL 5593 - The African-American Novel (3.0 cr)
  or AFRO 3593 - The African American Novel (3.0 cr)
  or AFRO 5593 - The African American Novel (3.0 cr)
• ENGL 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
  or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
• ENGL 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
  or AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
• ENGL 4232 - American Drama by Writers of Color [DSJ] (3.0 cr)
  or AAS 4232 - American Drama by Writers of Color (3.0 cr)
• ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
  or AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)

Language, Theory, and Criticism
This requirement allows students to deepen their understanding of the English language or to concentrate on theoretical questions that shape readers’ understanding of texts.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• ENGL 3002 - Modern Literary Criticism and Theory (3.0 cr)
• ENGL 3505 - Protest Literature and Community Action [DSJ] (4.0 cr)
• ENGL 3506 - Social Movements & Community Education [CIV] (4.0 cr)
• ENGL 3601 - Analysis of the English Language (4.0 cr)
• ENGL 3741 - Literacy and American Cultural Diversity [DSJ, LITR] (4.0 cr)
• ENGL 4003 - History of Literary Theory (3.0 cr)
• ENGL 4722 - Alphabet to Internet: History of Writing Technologies (3.0 cr)
• ENGL 4612 - Old English I (3.0 cr)
  or MEST 4612 - Old English I (3.0 cr)
• ENGL 4613 - Old English II (3.0 cr)
  or MEST 4613 - Old English II (3.0 cr)

Electives
Electives are devoted to in-depth study of particular authors, topics, periods, or genres. Any ENGL/W 3xxx-5xxx not used to fulfill other major requirements may be used as an elective. A course used as an elective may not be used to satisfy the historically-oriented literature requirement.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
Lower-division Elective
Students may, but are not required to, count one ENGL/W 1xxx toward the major.
Take 0 - 1 course(s) from the following:
• ENGL 1001W - Introduction to Literature: Poetry, Drama, Narrative [LITR, WI] (4.0 cr)
• ENGL 1031 - Introduction to the Short Story [LITR] (3.0 cr)
• ENGL 1041 - Adaptation: Literature into Film [AH] (3.0 cr)
• ENGL 1051 - Progress & Madness: Literature, Science & Technology [LITR] (3.0 cr)
• ENGL 1172 - The Story of King Arthur [LITR] (3.0 cr)
• ENGL 1181W - Introduction to Shakespeare [LITR, WI] (4.0 cr)
• ENGL 1201W - Contemporary American Literature [LITR, WI] (4.0 cr)
• ENGL 1301W - Introduction to Multicultural Literatures of the United States [LITR, DSJ, WI] (4.0 cr)
• ENGL 1401W - Introduction to World Literatures in English [LITR, GP, WI] (4.0 cr)
• ENGL 1501W - Literature and Public Life [LITR, CIV, WI] (4.0 cr)
• ENGW 1101W - Introduction to Creative Writing [LITR, WI] (4.0 cr)
• ENGW 1102 - Introduction to Fiction Writing (3.0 cr)
• ENGW 1103 - Introduction to Poetry Writing (3.0 cr)
• ENGW 1104 - Introduction to Literary Nonfiction Writing (3.0 cr)
• ENGL 19xx - Freshman Seminar
• ENGL 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
  or GWSS 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
• ENGL 1701 - Modern Fiction [LITR] (3.0 cr)
  or ENGL 1701H - Honors: Modern Fiction [LITR] (3.0 cr)
• Upper-division Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• ENGL 3002 - Modern Literary Criticism and Theory (3.0 cr)
• ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
• ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
• ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)
• ENGL 3013 - Poems about Cities (3.0 cr)
• ENGL 3022 - Science Fiction and Fantasy (3.0 cr)
• ENGL 3023 - Children's Literature (3.0 cr)
• ENGL 3024 - The Graphic Novel (3.0 cr)
• ENGL 3026 - Mediterranean Wanderings: Literature and History on the Borders of Three Continents [GP] (3.0 cr)
• ENGL 3027W - The Essay [WI] (4.0 cr)
• ENGL 3028 - Paranoia and Pleasure: Contemporary American Spy Novels [LITR] (3.0 cr)
• ENGL 3032 - Shakespeare in London (3.0 cr)
• ENGL 3040 - Studies in Film (3.0 cr)
• ENGL 3045 - Cinematic Seductions: Sex, Gender, Desire (3.0 cr)
• ENGL 3061 - Literature and Music [LITR] (3.0 cr)
• ENGL 3070 - Studies in Literary and Cultural Modes (3.0 cr)
• ENGL 3071 - The American Food Revolution in Literature and Television [CIV] (3.0 cr)
• ENGL 3090 - General Topics (3.0 cr)
• ENGL 3091 - The Literature and Film of Baseball [LITR] (3.0 cr)
• ENGL 3092 - The Original Walking Dead: Misbehaving Dead Bodies in the 19th Century [LITR] (3.0 cr)
• ENGL 3114 - Dreams and Dream Visions (3.0 cr)
• ENGL 3132 - The King James Bible as Literature (3.0 cr)
• ENGL 3134 - Milton and Reformation (3.0 cr)
• ENGL 3141 - The Restoration and the Eighteenth Century: Sex, Satire, and Sentiment (3.0 cr)
• ENGL 3151 - Romantic Literatures and Cultures (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
• ENGL 3181 - Contemporary Literary Nonfiction [LITR] (3.0 cr)
• ENGL 3182 - Irish Literature (3.0 cr)
• ENGL 3212 - American Poetry from 1900 (3.0 cr)
• ENGL 3221 - American Novel to 1900 (3.0 cr)
• ENGL 3222 - American Novel from 1900 (3.0 cr)
• ENGL 3231 - American Drama (3.0 cr)
• ENGL 3350 - Women Writers (3.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• ENGL 3502 - Nature Stories: Environmental Discourse in Action [LITR, CIV] (4.0 cr)
• ENGL 3505 - Protest Literature and Community Action [DSJ] (4.0 cr)
• ENGL 3506 - Social Movements & Community Education [CIV] (4.0 cr)
• ENGL 3601 - Analysis of the English Language (4.0 cr)
• ENGL 3704 - Introduction to Editing and Publishing (4.0 cr)
• ENGL 3711 - Literary Magazine Production Lab I (4.0 cr)
• ENGL 3712 - Literary Magazine Production Lab II (4.0 cr)
• ENGL 3714 - The Business of Publishing (3.0 cr)
• ENGL 3715 - Literary and American Cultural Diversity [DSJ, LITR] (4.0 cr)
• ENGL 4003 - History of Literary Theory (3.0 cr)
• ENGL 4152 - Nineteenth Century British Novel (3.0 cr)
• ENGL 4233 - Modern and Contemporary Drama (3.0 cr)
• ENGL 4722 - Alphabet to Internet: History of Writing Technologies (3.0 cr)
• ENGL 5040 - Theories of Film (3.0 cr)
• ENGL 5090 - Readings in Special Subjects (1.0 - 4.0 cr)
• ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 5121 - Readings in Early Modern Literature and Culture (3.0 cr)
• ENGL 5140 - Readings in 18th Century Literature and Culture (3.0 cr)
• ENGL 5150 - Readings in 19th-Century Literature and Culture (3.0 cr)
• ENGL 5170 - Readings in 20th-Century Literature and Culture (3.0 cr)
• ENGL 5300 - Readings in American Minority Literature (3.0 cr)
• ENGL 5510 - Readings in Criticism and Theory (3.0 cr)
• ENGL 5743 - History of Rhetoric and Writing (3.0 cr)
• ENGL 5750 - Topics in Rhetoric, Composition, and Language (3.0 cr)
• ENGL 5805 - Writing for Publication (3.0 cr)
• ENGW 3102 - Intermediate Fiction Writing (3.0 cr)
• ENGW 3104 - Intermediate Poetry Writing (3.0 cr)
• ENGW 3106 - Intermediate Literary Nonfiction Writing (3.0 cr)
• ENGW 3110 - Topics in Creative Writing (3.0 cr)
• ENGW 4205 - Screenwriting (3.0 cr)
• ENGW 5102 - Graduate Fiction Writing (4.0 cr)
• ENGW 5104 - Graduate Poetry Writing (4.0 cr)
• ENGW 5106 - Graduate Literary Nonfiction Writing (4.0 cr)
• ENGW 5130 - Topics in Graduate Creative Writing (4.0 cr)
• ENGW 5310 - Reading as Writers (4.0 cr)
• ENGL 3006W - Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)
or ENGL 3006V - Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)
or JWST 3011 - Jewish American Literature: Religion, Culture, and the Immigrant Experience [HIS, DSJ] (3.0 cr)
or RELS 3628 - Jewish American Literature: Religion, Culture, and the Immigrant Experience [HIS, DSJ] (3.0 cr)
• ENGL 3020 - Studies in Narrative (3.0 cr)
or ENGL 5020 - Studies in Narrative (3.0 cr)
• ENGL 3025 - The End of the World in Literature and History [HIS] (3.0 cr)
or RELS 3627 - The End of the World in Literature and History [HIS] (3.0 cr)
• ENGL 3101 - Survey of Medieval English Literature (3.0 cr)
or MEST 3101 - Survey of Medieval English Literature (3.0 cr)
• ENGL 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (3.0 cr)
• ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
or AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
• ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
or AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
or GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
• ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
or CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
• ENGL 3509W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or AFRO 3509W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
• ENGL 3593 - The African American Novel (3.0 cr)
or ENGL 5593 - The African-American Novel (3.0 cr)
or AFRO 3593 - The African American Novel (3.0 cr)
or AFRO 5593 - The African American Novel (3.0 cr)
• ENGL 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
• ENGL 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
or AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
• ENGL 4232 - American Drama by Writers of Color [DSJ] (3.0 cr)
or AAS 4232 - American Drama by Writers of Color (3.0 cr)
• ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
or AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
• ENGL 4612 - Old English I (3.0 cr)
or MEST 4612 - Old English I (3.0 cr)
• ENGL 4613 - Old English II (3.0 cr)
or MEST 4613 - Old English II (3.0 cr)
• ENGL 5501 - Origins of Cultural Studies (3.0 cr)
or CSCL 5401 - Origins of Cultural Studies (3.0 cr)
• ENGL 5597 - Seminar: Harlem Renaissance (3.0 cr)
or AFRO 3597 - Seminar: Harlem Renaissance (3.0 cr)
or AFRO 5597 - Seminar: Harlem Renaissance (3.0 cr)
or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
or ARTH 5627 - Seminar: Harlem Renaissance (3.0 cr)
• ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
or JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• Directed Study
Take 0 - 9 credit(s) from the following:
• ENGL 3993 - Directed Study (1.0 - 4.0 cr)

Capstone
Students who double major and choose to complete the capstone requirement in their other major may waive the English BA capstone, but they do not need to replace the 4 credit capstone with 4 credits of upper-level coursework to reach the major credit minimum.
Take 1 - 2 course(s) totaling exactly 4 credit(s) from the following:

Capstone Seminar in English
ENGL 3060W is a rigorous and intensive seminar in which students produce an extended, scholarly essay.
ENGL 3960W - Capstone Seminar in English [WI] (4.0 cr)

Capstone Seminar in Creative Writing
ENGL 3960W is an advanced creative writing workshop in which students produce a substantial manuscript of poetry, literary fiction,
or literary nonfiction.

**ENGW 3960W - Capstone Seminar in Creative Writing [WI] (4.0 cr)**

**Honors Thesis: magna cum laude or cum laude**
Honors students who wish to graduate magna cum laude or cum laude may write an Honors thesis in ENGL/ENGW 3960W.

**Honors Thesis: summa cum laude**
Honors students who wish to graduate summa cum laude must write a 40-50 page summa thesis in a 2-semester, 4-credit thesis workshop (ENGL 3883V). ENGL 3883V is usually taken in 2 semesters of 2 credits each. ENGL 3883V provides an overview of the writing and research process, a supportive community of fellow writers, and a structure to help students complete this large-scale, long-term, in-depth project, whether their thesis involves literary analysis or creative writing.

**ENGL 3883V - Honors Thesis [WI] (1.0 - 4.0 cr)**

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements. Honors courses ending with V will also count.

Take 0 - 1 course(s) from the following:
- **ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)**
- **ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)**
- **ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)**
- **ENGL 3027W - The Essay [WI] (4.0 cr)**
- **ENGL 3883V - Honors Thesis [WI] (1.0 - 4.0 cr)**
- **ENGL 3960W - Capstone Seminar in English [WI] (4.0 cr)**
- **ENGL 3006W - Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)**
  - or **ENGL 3006V - Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)**
- **ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)**
  - or **AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)**
- **ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)**
  - or **AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)**
- **GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)**
  - or **GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)**
- **ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)**
  - or **CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)**
- **ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)**
  - or **AFRO 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)**
- **ENGL 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)**
  - or **AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)**
- **ENGL 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)**
  - or **AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)**
- **ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)**
  - or **JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)**
Twin Cities Campus
English Minor
English Language & Literature
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 19

Students who minor in English study literature and other forms of verbal expression, literary history and criticism, critical theory, linguistics, and creative writing. Courses offered by the department explore a wide range of discourses written in English—from around the globe, as well as from Britain and America—including poetry, drama, fiction, film, popular culture, and electronic media.

Students begin their studies, ideally in their sophomore year, with the department's methods course (ENGL 3001W), then progress to taking Shakespeare (ENGL 3007 or a department-approved Shakespeare course) and a historical foundation course. In addition, students choose at least two English elective courses (6 to 8 credits of 3xxx or higher in ENGL or ENGW). The methods course—ENGL 3001W—provides minors with skills in close and critical reading, the background in history and culture, and multiple approaches to literary works that will guide their continued studies. Shakespeare and the historical foundation course situate literary works in historical, cultural, and theoretical perspective.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Coursework completed outside of the Department of English may be counted, but only with prior departmental approval.

Students may earn a bachelor of arts in English and a minor in creative writing, or a minor in English and a minor in creative writing. Students may not earn a BA in English and a minor in English. Only one course may count toward both the major and minor or toward both minors.

Textual Analysis
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- ENGL 3001W - Textual Analysis: Methods [WI] (4.0 cr)
  or ENGL 3001V - Honors: Textual Analysis: Methods [WI] (4.0 cr)

Shakespeare
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ENGL 3007 - Shakespeare [LITR] (3.0 cr)
  or ENGL 3007H - Honors: Shakespeare [LITR] (3.0 cr)
  or Department-approved Shakespeare course at the 3xxx-level

Historical Foundation Course
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
- ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
- ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)
- ENGL 3026 - Mediterranean Wanderings: Literature and History on the Borders of Three Continents [GP] (3.0 cr)
- ENGL 3092 - The Original Walking Dead: Misbehaving Dead Bodies in the 19th Century [LITR] (3.0 cr)
- ENGL 3114 - Dreams and Dream Visions (3.0 cr)
- ENGL 3132 - The King James Bible as Literature (3.0 cr)
- ENGL 3134 - Milton and Rebellion (3.0 cr)
- ENGL 3141 - The Restoration and the Eighteenth Century: Sex, Satire, and Sentiment (3.0 cr)
- ENGL 3151 - Romantic Literatures and Cultures (3.0 cr)
- ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
- ENGL 3182 - Irish Literature (3.0 cr)
- ENGL 3212 - American Poetry from 1900 (3.0 cr)
- ENGL 3221 - American Novel to 1900 (3.0 cr)
- ENGL 3222 - American Novel from 1900 (3.0 cr)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 3231</td>
<td>American Drama (3.0 cr)</td>
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<tr>
<td>ENGL 4152</td>
<td>Nineteenth Century British Novel (3.0 cr)</td>
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<tr>
<td>ENGL 4233</td>
<td>Modern and Contemporary Drama (3.0 cr)</td>
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<tr>
<td>ENGL 5110</td>
<td>Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)</td>
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<tr>
<td>ENGL 3006W</td>
<td>Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)</td>
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<tr>
<td>or ENGL 3006V</td>
<td>Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)</td>
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<tr>
<td>ENGL 3025</td>
<td>The End of the World in Literature and History [HIS] (3.0 cr)</td>
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<td>or RELS 3627</td>
<td>The End of the World in Literature and History [HIS] (3.0 cr)</td>
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<td>ENGL 3101</td>
<td>Survey of Medieval English Literature (3.0 cr)</td>
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<td>or MEST 3101</td>
<td>Survey of Medieval English Literature (3.0 cr)</td>
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<tr>
<td>ENGL 3102</td>
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<td>or MEST 3102</td>
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<tr>
<td>ENGL 3593</td>
<td>The African American Novel (3.0 cr)</td>
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<td>or ENGL 5593</td>
<td>The African-American Novel (3.0 cr)</td>
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<tr>
<td>ENGL 4232</td>
<td>American Drama by Writers of Color [DSJ] (3.0 cr)</td>
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<tr>
<td>or AAS 4232</td>
<td>American Drama by Writers of Color (3.0 cr)</td>
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<tr>
<td>ENGL 4311</td>
<td>Asian American Literature and Drama [LITR, DSJ] (3.0 cr)</td>
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<tr>
<td>or AAS 4311</td>
<td>Asian American Literature and Drama [LITR, DSJ] (3.0 cr)</td>
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</tr>
</tbody>
</table>

**Electives**

Any ENGL 3xxx, 4xxx, 5xxx or its cross-list not used to fulfill other minor requirements may count as an elective.

Take 2 or more course(s) totaling 6 - 8 credit(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>ENGL 3002</td>
<td>Modern Literary Criticism and Theory (3.0 cr)</td>
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<tr>
<td>ENGL 3003W</td>
<td>Historical Survey of British Literatures I [HIS, WI] (4.0 cr)</td>
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<tr>
<td>ENGL 3004W</td>
<td>Historical Survey of British Literatures II [HIS, WI] (4.0 cr)</td>
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</tr>
<tr>
<td>ENGL 3005W</td>
<td>Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)</td>
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<tr>
<td>ENGL 3013</td>
<td>Poems about Cities (3.0 cr)</td>
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<tr>
<td>ENGL 3022</td>
<td>Science Fiction and Fantasy (3.0 cr)</td>
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<tr>
<td>ENGL 3023</td>
<td>Children's Literature (3.0 cr)</td>
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<td>ENGL 3024</td>
<td>The Graphic Novel (3.0 cr)</td>
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<td>ENGL 3026</td>
<td>Mediterranean Wanderings: Literature and History on the Borders of Three Continents [GP] (3.0 cr)</td>
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<td>ENGL 3027W</td>
<td>The Essay [WI] (4.0 cr)</td>
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<td>ENGL 3028</td>
<td>Paranoia and Pleasure: Contemporary American Spy Novels [LITR] (3.0 cr)</td>
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<td>ENGL 3032</td>
<td>Shakespeare in London (3.0 cr)</td>
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<td>ENGL 3040</td>
<td>Studies in Film (3.0 cr)</td>
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<td>ENGL 3045</td>
<td>Cinematic Seductions: Sex, Gender, Desire (3.0 cr)</td>
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<td>Literature and Music [LITR] (3.0 cr)</td>
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<td>ENGL 3070</td>
<td>Studies in Literary and Cultural Modes (3.0 cr)</td>
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<td>ENGL 3071</td>
<td>The American Food Revolution in Literature and Television [CIV] (3.0 cr)</td>
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<td>General Topics (3.0 cr)</td>
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<td>ENGL 3091</td>
<td>The Literature and Film of Baseball [LITR] (3.0 cr)</td>
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<td>The Original Walking Dead: Misbehaving Dead Bodies in the 19th Century [LITR] (3.0 cr)</td>
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<td>ENGL 3114</td>
<td>Dreams and Dream Visions (3.0 cr)</td>
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<td>ENGL 3132</td>
<td>The King James Bible as Literature (3.0 cr)</td>
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<td>ENGL 3134</td>
<td>Milton and Rebellion (3.0 cr)</td>
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<td>ENGL 3141</td>
<td>The Restoration and the Eighteenth Century: Sex, Satire, and Sentiment (3.0 cr)</td>
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<td>ENGL 3151</td>
<td>Romantic Literatures and Cultures (3.0 cr)</td>
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<td>ENGL 3161</td>
<td>Victorian Literatures and Cultures (3.0 cr)</td>
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<td>ENGL 3181</td>
<td>Contemporary Literary Nonfiction [LITR] (3.0 cr)</td>
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<td>Irish Literature (3.0 cr)</td>
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<td>ENGL 3222</td>
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<td>ENGL 3231</td>
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<td>Nature Stories: Environmental Discourse in Action [LITR, CIV]</td>
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<td>ENGL 3505</td>
<td>Protest Literature and Community Action [DSJ]</td>
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<td>ENGL 3506</td>
<td>Social Movements &amp; Community Education [CIV]</td>
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<td>Analysis of the English Language</td>
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<td>ENGL 3704</td>
<td>Introduction to Editing and Publishing</td>
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<td>Literary Magazine Production Lab I</td>
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<td>Literary Magazine Production Lab II</td>
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<td>ENGL 3714</td>
<td>The Business of Publishing</td>
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<td>ENGL 3741</td>
<td>Literacy and American Cultural Diversity [LITR, ENV]</td>
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<td>ENGL 3903</td>
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<td>Nineteenth Century British Novel</td>
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<td>Modern and Contemporary Drama</td>
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<td>ENGL 4722</td>
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<td>Readings in Special Subjects [1.0 - 4.0 cr]</td>
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<td>Medieval Literatures and Cultures: Intro to Medieval Studies</td>
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<td>Readings in Early Modern Literature and Culture</td>
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<td>Readings in 18th Century Literature and Culture</td>
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<td>Readings in 19th-Century Literature and Culture</td>
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<td>ENGL 5170</td>
<td>Readings in 20th-Century Literature and Culture</td>
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<td>ENGL 5300</td>
<td>Readings in American Minority Literature</td>
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<td>ENGL 5510</td>
<td>Readings in Criticism and Theory</td>
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<td>ENGL 5743</td>
<td>History of Rhetoric and Writing</td>
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<td>Topics in Rhetoric, Composition, and Language</td>
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<td>Writing for Publication</td>
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<td>Intermediate Poetry Writing</td>
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<td>Intermediate Literary Nonfiction Writing</td>
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<td>ENGW 3110</td>
<td>Topics in Creative Writing</td>
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<td>ENGW 4205</td>
<td>Screenwriting</td>
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<tr>
<td>ENGW 5102</td>
<td>Graduate Fiction Writing</td>
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<td>ENGW 5104</td>
<td>Graduate Poetry Writing</td>
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<td>ENGW 5106</td>
<td>Graduate Literary Nonfiction Writing</td>
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<td>ENGW 5130</td>
<td>Topics in Graduate Creative Writing</td>
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<td>ENGW 5310</td>
<td>Reading as Writers</td>
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<td>ENGL 3006W</td>
<td>Survey of American Literatures and Cultures II [LITR, DSJ, WI]</td>
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<td>Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI]</td>
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<td>ENGL 3201W</td>
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<td>Asian America through Arts and Culture [AH, DSJ]</td>
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<td>Asian America Through Arts and Culture [AH, DSJ]</td>
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<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI]</td>
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<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI]</td>
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<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI]</td>
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<td>ENGL 3507W</td>
<td>Introduction to Chicana/o Literature [LITR, DSJ, WI]</td>
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<td>CHIC 3507W</td>
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<td>ENGL 3592W</td>
<td>Introduction to Black Women Writers in the United States [LITR, DSJ, WI]</td>
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<td>AFRO 3592W</td>
<td>Introduction to Black Women Writers in the United States [LITR, DSJ, WI]</td>
<td>4.0 cr</td>
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<td>ENGL 3593</td>
<td>The African American Novel [LITR, DSJ, WI]</td>
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<td>AFRO 3593</td>
<td>The African American Novel [LITR, DSJ, WI]</td>
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<td>ENGL 5593</td>
<td>The African-American Novel [LITR, DSJ, WI]</td>
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<tr>
<td>ENGL 3597W</td>
<td>Introduction to African American Literature and Culture I [LITR, DSJ, WI]</td>
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or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, DSJ, WI] (4.0 cr)
• ENGL 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
  or AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
• ENGL 4232 - American Drama by Writers of Color [DSJ] (3.0 cr)
  or AAS 4232 - American Drama by Writers of Color (3.0 cr)
• ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
  or AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
• ENGL 4612 - Old English I (3.0 cr)
  or MEST 4612 - Old English I (3.0 cr)
• ENGL 4613 - Old English II (3.0 cr)
  or MEST 4613 - Old English II (3.0 cr)
• ENGL 5501 - Origins of Cultural Studies (3.0 cr)
  or CSCL 5401 - Origins of Cultural Studies (3.0 cr)
• ENGL 5597 - Seminar: Harlem Renaissance (3.0 cr)
  or AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
  or AFRO 5627 - Seminar: Harlem Renaissance (3.0 cr)
  or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
• ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
  or JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• Directed Study
  Take 0 - 1 course(s) from the following:
  • ENGL 3993 - Directed Study (1.0 - 4.0 cr)
Environmental Geoscience is the study of processes within, and interactions between, the atmosphere, the ocean, and the land that determine the habitability and sustainability of the planet. In short, it is the branch of geoscience that is concerned with the interactions between humans and the geologic environment. The subject covers natural processes that have been modifying the planet over its entire history, but with a strong focus on understanding the modern system and how it has been affected by human activities. Students earning a Major in Environmental Geoscience will develop key observational and analytical skills that enable them to address fundamental questions about the functioning of geoscience systems, especially in relation to hydrology and water quality, soils, mineral resources, and climate change.

This major is well suited to those interested in pursuing geoscience careers in environmental, geological and hydrogeological consulting, industry, and local, state, and federal government agencies. In addition to acquiring a foundation in the geologic processes that govern water, soil, and natural resource development, students will gain a range of transferable skills, including: written and oral reports; critical analysis and interpretation of data; and group work.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 4 courses before admission to the program.

Freshman and transfer students are usually admitted to pre-major status before admission to this major

Students interested in the Environmental Geosciences as a major may want to consider taking ESCI 1001 or other ESCI 1xxx course.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Courses Required for Admission to the Program
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:

Mathematics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
• MATH 1271 - Calculus I [MATH] (4.0 cr)
• MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Chemistry
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
• CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

Chemistry Honors
• CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
• CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Physics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
• PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Environmental Geosciences BA is ESCI.

At least 41 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Courses Required for Environmental Geosciences Major

Foundation Course
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
- ESCI 1003 - Dinosaurs and Our World [BIOL, ENV] (4.0 cr)
- ESCI 1005 - Geology and Cinema [PHYS, ENV] (4.0 cr)
- ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
- ESCI 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)
- ESCI 1012 - Natural Disasters [TS] (3.0 cr)

Statistics
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)

Core Courses
Take exactly 14 course(s) totaling exactly 47 credit(s) from the following:
- ESCI 2301 - Mineralogy (3.0 cr)
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
- ESCI 4501 - Structural Geology (3.0 cr)
- ESCI 3891 - Field Methods (2.0 cr)
- ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- ESCI 3911 - Introductory Field Geology (4.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- ESCI 4203 - Environmental Geophysics (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
- ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
- ESCI 4702 - General Hydrogeology (4.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- ESCI 5805 - Standards and Practices for Professional Geoscientists (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)

Advanced Field Geology
This course also fulfills the CLA Capstone Requirement. Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the Advanced Field Geology course.

Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- ESCI 4911 - Advanced Field Geology (4.0 cr)
- ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)

Electives
Please consider selecting courses from this list that meet the 18 upper division (3xxx level or higher) credits outside the major designator.

Take 12 or more credit(s) from the following:

Earth Science Related Courses
Take 0 or more course(s) from the following:
- EEB 5601 - Limnology (3.0 cr)
- ESCI 2202 - Earth History (4.0 cr)
- ESCI 2203 - Earth Surface Dynamics (4.0 cr)
- ESCI 2302 - Petrology (3.0 cr)

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Information current as of September 02, 2020
• ESCI 3004 - Water and Society [ENV] (3.0 cr)
• ESCI 3005 - Earth Resources (3.0 cr)
• ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
• ESCI 3093 - Directed Studies in Earth & Environmental Sciences: Junior (1.0 - 4.0 cr)
• ESCI 3202 - Fluid Earth Dynamics (4.0 cr)
• ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
• ESCI 3890 - Field Workshop (1.0 cr)
• ESCI 3896 - Internship in Earth and Environmental Sciences (1.0 - 4.0 cr)
• ESCI 4093 - Directed Studies in Earth & Environmental Sciences: Senior (1.0 - 4.0 cr)
• ESCI 4094 - Senior Thesis (2.0 cr)
• ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
• ESCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
• ESCI 4211 - Solid Earth Geophysics I (3.0 cr)
• ESCI 4212 - Solid Earth Geophysics II (3.0 cr)
• ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
• ESCI 4502 - Tectonic Styles (3.0 cr)
• ESCI 4703 - Glacial Geology (4.0 cr)
• ESCI 5201 - Time-Series Analysis of Geological Phenomena (3.0 cr)
• ESCI 5203 - Mineral and Rock Physics (3.0 cr)
• ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
• ESCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
• ESCI 5402 - Science and Politics of Global Warming (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)
• ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
or ESCI 5102 - Climate Change and Human History (3.0 cr)

• Civil, Environmental, and Geoengineering
Take 0 or more course(s) from the following:
• CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
• CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
• CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)

• Data Literacy and Environmental Geoscience
Take 0 or more course(s) from the following:
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
• IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 3032 - Regression and Correlated Data (4.0 cr)

• Social Sciences and Environmental Geoscience
Take 0 or more course(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• HSCI 3401 - Ethics in Science and Technology [HIS, CIV] (3.0 cr)
• PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)

• Grand Challenge Courses
Take 0 or more course(s) from the following:
• GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 6008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill
other major requirements.
Take 0 - 1 course(s) from the following:
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
- ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
- ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
Environmental Geosciences Minor
CLA Dean's Office
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 18

Environmental geoscience is the study of processes within, and interactions between, the atmosphere, ocean and the solid Earth that determine the habitability of the planet. In short, it is the branch of geology that is concerned with the interactions between humans and the geologic environment. The subject covers natural processes that have been modifying the planet over its entire history, but with a strong focus on understanding the modern system and how it has been affected by human activities. Students earning a Minor in Environmental Geoscience will develop key observational and analytical skills that enable them to address fundamental questions about the functioning of Earth systems, especially in relation to climate change, hydrology and water resources, and mineral resources. Students will cover core topics in Earth Science that address topics such as, (1) the drivers of climate change in the Earths past and how will these processes may change in the future, (2) the frequency and setting of natural hazards relevant to modern society (e.g., floods, tsunamis, earthquakes, and weather-related phenomena), (3) the impacts of changing nutrient cycling and pollution on the sustainability of freshwater and marine ecosystems, and (4) the effects of the use of energy and materials resources to ensure continued functioning of modern society.

This minor is well suited to those interested in environmental science and policy, who are looking to acquire a foundation in the geologic processes that govern water, soil, and natural resource development. Students will also gain a range of transferable skills, including: written and oral reports; critical analysis and interpretation of data; and group working.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Foundation Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
- ESCI 1003 - Dinosaurs and Our World [BIOL, ENV] (4.0 cr)
- ESCI 1005 - Geology and Cinema [PHYS, ENV] (4.0 cr)
- ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
- ESCI 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)
- ESCI 1012 - Natural Disasters [TS] (3.0 cr)

Electives
Students choose electives in consultation with the Earth Sciences director of undergraduate studies/advisor.
Take 14 or more credit(s) from the following:
- ESCI 2201 - Solid Earth Dynamics (4.0 cr)
- ESCI 2202 - Earth History (4.0 cr)
- ESCI 2203 - Earth Surface Dynamics (4.0 cr)
- ESCI 2301 - Mineralogy (3.0 cr)
- ESCI 2302 - Petrology (3.0 cr)
- ESCI 3004 - Water and Society [ENV] (3.0 cr)
- ESCI 3005 - Earth Resources (3.0 cr)
- ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
- ESCI 3202 - Fluid Earth Dynamics (4.0 cr)
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
- ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
- ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- ESCI 4203 - Environmental Geophysics (3.0 cr)
- ESCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
- ESCI 4211 - Solid Earth Geophysics I (3.0 cr)
- ESCI 4212 - Solid Earth Geophysics II (3.0 cr)
- ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
- ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
- ESCI 4501 - Structural Geology (3.0 cr)
- ESCI 4502 - Tectonic Styles (3.0 cr)
- ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
- ESCI 4702 - General Hydrogeology (4.0 cr)
- ESCI 4703 - Glacial Geology (4.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- ESCI 5201 - Time-Series Analysis of Geological Phenomena (3.0 cr)
- ESCI 5203 - Mineral and Rock Physics (3.0 cr)
- ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
- ESCI 5302 - Isotope Geology (3.0 cr)
- ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
- ESCI 5503 - Advanced Petrology (3.0 cr)
- ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
- SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
- ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
  or ESCI 5102 - Climate Change and Human History (3.0 cr)

**Elective with departmental advisor permission only**

Students may substitute one of the following courses as a minor course with prior approval from the Earth Sciences departmental advisor. This is not an exhaustive list, see department advisor for approval of other courses.

Take 0 or more course(s) from the following:
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
Twin Cities Campus
Finnish Minor
German, Nordic, Slavic & Dutch
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15 to 35

Finland is the land of the Kalevala, the Finnish national epic that has influenced literature ranging from Longfellow's The Song of Hiawatha to Tolkien's The Lord of the Rings. Finland is also home to many world-famous heavy metal bands, the technological giant Nokia, and is a world leader in the fields of education, design, forestry, bio-energy, and the arts.

The Finnish minor provides a solid foundation in the Finnish language and introduces students to the cultures of the Nordic countries, including the indigenous peoples of the High North. Minors typically pursue careers in international business, telecommunications, technology, and forest management.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning and Intermediate Finnish
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- FIN 1001 - Beginning Finnish I (5.0 cr)
- FIN 1002 - Beginning Finnish II (5.0 cr)
- FIN 1003 - Intermediate Finnish I (5.0 cr)
- FIN 1004 - Intermediate Finnish II (5.0 cr)

Minor Requirements
Students are required to take 4 semester(s) of Finnish.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota Twin Cities campus. In the Finnish minor, this does not include learning abroad courses taken for resident credit.

Students with a German, Scandinavian, Dutch major may elect a minor in Finnish, but no courses may count for both the major and the minor.

Advanced Finnish
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- FIN 3011 - Advanced Finnish (3.0 cr)
- FIN 3012 - Advanced Finnish (3.0 cr)

Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
- SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)
- SCAN 3503 - Scandinavian Folklore [LITR, GP] (3.0 cr)
- SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
- SCAN 3505 - Scandinavian Fiction From 1890 to Present [LITR] (3.0 cr)
- SCAN 3601 - Great Literary Works of Scandinavia [LITR] (3.0 cr)
- SCAN 3602 - The Literary Fairy Tale in Scandinavia [LITR] (3.0 cr)
- SCAN 3604W - Living Pictures: An Introduction to Nordic Cinema [AH, WI] (3.0 cr)
- SCAN 3613 - Children's Literature in Scandinavia [LITR] (3.0 cr)
• SCAN 3670 - Topics in Scandinavian Studies (3.0 cr)
• SCAN 5502 - The Icelandic Saga (3.0 cr)
• SCAN 5670 - Topics in Scandinavian Studies (3.0 cr)
• SCAN 5701 - Old Norse Language and Literature (3.0 cr)
• SCAN 5703 - Old Norse Poetry (3.0 cr)
• SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)
  or SCAN 4011 - Readings in Scandinavian Languages (2.0 cr)
• SCAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
  or SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
  or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SCAN 3617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
  or SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
• SCAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
  or SCAN 5634 - Scandinavian Women Writers [GP, LITR] (3.0 cr)
• Directed Study
  Take 0 - 1 course(s) from the following:
  • SCAN 3993 - Directed Studies (1.0 - 4.0 cr)
  • SCAN 5993 - Directed Studies (1.0 - 4.0 cr)
Twin Cities Campus
French Advanced-Level Proficiency Certificate
French & Italian
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 6 to 8
- This certificate requires an intensive French-language immersion experience. See certificate requirements for the options to fulfill this requirement. This certificate requires students to achieve a minimum score on two exams. At the beginning of the program, students must achieve a passing score on the French LPE. At the end, they must achieve at least an advanced low rating on all four skills of the ACTFL French language examination (speaking, listening, reading, writing). Merely fulfilling the other program requirements is not sufficient for students to obtain the certificate.
- Degree: French Advanced-Level Proficiency Certificate

This certificate is designed for students interested in achieving advanced-level proficiency in French and having their skills formally recognized. People who have advanced-level proficiency in French possess the speaking, reading, writing and listening skills sufficient to satisfy the requirements of everyday situations at home and at work. They also generally understand and are understood by native speakers of French. For an extended definition of advanced-level proficiency, please visit the American Council on the Teaching of Foreign Languages website: www.actfl.org/sites/default/files/pdfs/ACTFLProficiencyGuidelines2012_FINAL.pdf The Certificate of Advanced-Level Proficiency is open to all University of Minnesota undergraduate students, especially those who seek higher levels of French proficiency in order to become more competitive for graduate or professional programs, careers with domestic French-speaking populations, or international careers.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Any major or minor offered by the Department of French and Italian may be combined with the French Advanced-Level Proficiency Certificate.

French LPE
Pass the French Language Proficiency Exam (LPE). This exam is typically taken after 4 semesters of college-level study, or the equivalent. For more information, please visit http://langtest.umn.edu/lpe.

Composition, Communication, and Content-Based Coursework
Take FREN 3016 or its equivalent abroad, and one content-based course, or two content-based courses. A content-based course is defined as one that is either taught almost exclusively in French, or for which the discussion section is delivered in French, and is content-based and focused on an academic discipline. Courses taken abroad will count if they are taught in French and have a minimum of 10 pages of written work in French with at least one assignment of at least 5 pages in length.
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:
FREN 3016 or equivalent
Take 0 - 1 course(s) from the following:
- FREN 3016 - Advanced French Composition and Communication (3.0 cr)
- MONT 3016 - Advanced French Composition and Communication (3.0 cr)
- course equivalent to FREN 3016 taken abroad
- Pre-approved content based courses
Any FREN 31xx, 32xx, 33xx, 34xx, 35xx, 36xx or 38xx may count as a pre-approved content-based course, provided they meet the
writing requirements indicated above. FREN 3101W, required for all majors and minors, meets the content-based course requirement, but students not completing the major/minor may opt for a course in linguistics [35xx] or culture [36xx].”

Take 1 - 2 course(s) from the following:

• FREN 3101W - Methods in French and Francophone Studies [LITR, WI] (3.0 cr)
• FREN 3111 - Medieval Stories (3.0 cr)
• FREN 3115 (Inactive) [CIV] (3.0 cr)
• FREN 3140 - Topics in Medieval and Renaissance Literature (3.0 cr)
• FREN 3240 - Topics in Ancien Regime Literature (3.0 cr)
• FREN 3260 - Dramas of Culture: 20th-Century French and Francophone Theater (3.0 cr)
• FREN 3310 - Literature of Revolution and Upheaval (3.0 cr)
• FREN 3333 (Inactive) [GP] (3.0 cr)
• FREN 3340 - Topics in Modern French Literature (3.0 cr)
• FREN 3350 - Topics in Literature (3.0 cr)
• FREN 3410 - Topics in Quebecois Literature (3.0 cr)
• FREN 3431 - Gender and Sexuality in Francophone Literature and Cinema (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• FREN 3471 - Topics in Francophone African Literature and Cultures [GP] (3.0 cr)
• FREN 3479 - Francophone Writers of the African Diaspora (3.0 cr)
• FREN 3500 - Linguistic Analysis of French (3.0 cr)
• FREN 3521 - History of the French Language (3.0 cr)
• FREN 3531 - Sociolinguistics of French [GP] (3.0 cr)
• FREN 3541 - Oral Discourse of French (3.0 cr)
• FREN 3571 (Inactive)(3.0 cr)
• FREN 3611 - Speaking of Love in Medieval France: Stories, Songs, and Letters [LITR, GP] (3.0 cr)
• FREN 3612 (Inactive)[AH, CIV] (3.0 cr)
• FREN 3650 - Topics in French/Francophone Cultures (3.0 cr)
• other pre-approved content-based course

French-language Immersion
Participate in an intensive French-language immersion experience. There are three options for completing this requirement. Because Option 3 involves less contact with French speakers than Options 1 and 2, students should only take Option 3 if it is the only one available to them.

Option 1
Participate in an academic study-abroad experience of at least six weeks, that includes at least one course taught in French

Option 2
Complete a pre-approved immersion experience. This could include a service-learning experience or internship, or the completion of the Community Engagement Scholars Program, with a focus on opportunities to engage with native French speakers.

Option 3
Complete two full semesters of weekly language exchange with a native speaker through the CLA Language Centers TandemPlus program including 15 hours devoted to conversation in French. This experience must be documented through TandemPlus.

Self-assessment Instrument
Take the self-assessment and use this information to gauge your own proficiency level. It is strongly recommended that you do not attempt the ACTFL exam until the self-assessment results indicate that you may have achieved advanced-level proficiency.

Critical Reflection Essay
Submit a short essay (of 450-600 words) written in English that; (1) reflects on your French self-assessment results; (2) describes your current level of French language proficiency; (3) demonstrates how you have used your language and cultural understanding skills at the University and beyond through completion of some or all of the Additional Recommended Experiences listed below.

Achieve Advanced-Low or Higher on the ACTFL
When your self-assessment results indicate that you may be at advanced-level proficiency, you may take the ACTFL Advanced-level Exam. In order to complete your certificate, you must achieve a rating of Advanced-Low or higher in all 4 sections: speaking, writing, listening and reading. The cost for 4 sections of the ACTFL is $200. However, if you participate in the PACE Project you will be able to take the reading, listening and speaking exams at no cost and pay only for the writing exam.

Additional Recommended Experiences to Increase French-Language Proficiency
- Study abroad in a French-speaking country for at least a semester (this is highly recommended)
- Additional upper-division coursework taught in French (see the Certificate website)
- Service learning, volunteer work, or internship in a French-speaking context for at least a semester
- Participation in TandemPlus
- Spend an average of 15-20 hours per week outside of class actively using your French (reading, writing, speaking, listening)
Twin Cities Campus
French and Italian Studies B.A.
French & Italian
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 33 to 75
- Degree: Bachelor of Arts

The French and Italian studies major allows students interested in both cultures and languages to pursue a combined major. Students study specific works in each nation’s literature while also exploring the interrelations and cross-cultural exchanges that have contributed to Italian and French literature and culture. This comparative perspective introduces students to a broad range of issues and cultural practices.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must formally declare a major within the department before completing the majority of the major elective requirements.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisites
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may place out through EPT or LPE examinations. Students may declare the French and Italian Studies BA while FREN/ITAL 1004 is in progress.

Beginning and Intermediate French
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- FREN 1001 - Beginning French I (5.0 cr)
- FREN 1002 - Beginning French II (5.0 cr)
- or FREN 1022 - Accelerated Beginning French (5.0 cr)
- FREN 1003 - Intermediate French I (5.0 cr)
- FREN 1004 - Intermediate French II (5.0 cr)

Beginning and Intermediate Italian
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- ITAL 1001 - Beginning Italian I (5.0 cr)
- ITAL 1002 - Beginning Italian II (5.0 cr)
- ITAL 1003 - Intermediate Italian I (5.0 cr)
- ITAL 1004 - Intermediate Italian II (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete 4 semester(s) of French and Italian. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the French and Italian Studies BA is FREN.

At least 16 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. This includes learning abroad courses taken for resident credit. At least 4 of the 10 upper-division FREN, FRIT and ITAL courses (not counting the capstone)
must be taken in the Department of French and Italian at the University of Minnesota - Twin Cities campus.

Students may earn a BA or a minor in French and/or Italian, but not both. Any departmental major or minor may be combined with the French Advanced-Level Proficiency Certificate.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 4 course(s) totaling exactly 13 credit(s) from the following:
- FREN 3015 - Advanced French Grammar and Communication (3.0 cr)
- FREN 3016 - Advanced French Composition and Communication (3.0 cr)
- FREN 3101W - Methods in French and Francophone Studies [LITR, WI] (3.0 cr)
- ITAL 3015 - Reading, Conversation, and Composition (4.0 cr)

French Elective
FREN 30xx and 37xx courses do not count towards the French Elective requirement.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- FREN 31xx
- FREN 32xx
- FREN 33xx
- FREN 34xx
- FREN 35xx
- FREN 36xx
- FREN 38xx
- FREN 4970 - Directed Readings (1.0 - 4.0 cr)
- FREN 5xx

Italian Electives
Any ITAL 3xxx, 5xxx or its cross-list that is not counting towards a different minor requirement may count as Italian Electives. With the approval of the Italian studies undergraduate advisor, courses taken through other departments (e.g., art history, English, history, music) may count toward the Italian Studies minor when they pertain to Italian studies topics.
Take 9 or more credit(s) from the following:
- CNES 3104 {Inactive}(3.0 cr)
- ENGL 3040 - Studies in Film (3.0 cr)
- HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
- HIST 3621 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
- ITAL 3550 {Inactive}(3.0 cr)
- ITAL 3640 - Topics in Italian Studies (3.0 cr)
- ITAL 3837 - Imagining Italy: Italian and Italian-American Culture, History, and Society through Film [AH, GP] (4.0 cr)
- ITAL 3850 {Inactive}(3.0 cr)
- ITAL 4307 - Novellistica (3.0 cr)
- ITAL 4970 - Directed Readings (1.0 - 4.0 cr)
- ITAL 5401 {Inactive}(4.0 cr)
- ITAL 5609 {Inactive}(4.0 cr)
- ITAL 5640 {Inactive}(3.0 cr)
- ITAL 5970 - Directed Readings (1.0 - 4.0 cr)
- MUS 5620 - Topics in Opera History (3.0 cr)
- ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  or HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
- ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
  or HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
- CNES 3108 {Inactive}(3.0 cr)
  or RELS 3541 {Inactive}(3.0 cr)
- ITAL 3201 - Reading Italian Texts: Poetics, Rhetoric, Theory (3.0 cr)
  or ITAL 5201 - Reading Italian Texts: Poetics, Rhetoric, Theory (3.0 cr)
- ITAL 3203 - Italian Travelers: Borders and Travelers (3.0 cr)
  or ITAL 5203 - Italian Travelers: From the Enlightenment to the Present (3.0 cr)
- ITAL 5305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
- ITAL 3502 - Making of Modern Italy: From the Enlightenment to the Present. (3.0 cr)
  or ITAL 5502 - Making of Modern Italy: From the Enlightenment to the Present (3.0 cr)

French & Italian Electives
Excluding FRIT 5999, any FRIT 3xxx, 5xxx, or its cross-list that is not counting towards a different major requirement may count as a French & Italian Elective.
Take 6 or more credit(s) from the following:
• FRT 3600 - The Renaissance (3.0 cr)
• FRT 3850 - Topics in French and Italian Cinema (3.0 cr)
• FRT 3880 *(inactive)* (3.0 cr)
• FRT 5850 *(inactive)* (3.0 cr)

Capstone
The capstone is completed in FREN 4101W, 4101V, 4110V, and/or ITAL 3459W, in the last or next-to-last semester before graduation. Research topics must be approved by course instructor. Papers are written in consultation with course instructor or other appropriate faculty member. Honors students writing summa theses should take a total of 4 credits of capstone by combining 4101V and 4110V in their final year.

Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:
Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the French and Italian Studies capstone, and they do not need to replace the 2 credits. Students who waive the French and Italian Studies capstone may complete the BA with a minimum of 30 credits.

- **Capstone Seminar**
  - FREN 4101W - Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
  - or FREN 4101V - Honors Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
- **Capstone Independent Study**
  - FREN 4109W - Capstone Independent Study in French and Francophone Studies [WI] (2.0 cr)
  - or FREN 4110V - Honors Capstone Independent Study in French and Francophone Studies [WI] (2.0 - 4.0 cr)
  - or ITAL 3459W - Senior Project [WI] (2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• FREN 3101W - Methods in French and Francophone Studies [LITR, WI] (3.0 cr)
• FREN 4101W - Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
  - or FREN 4101V - Honors Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
• FREN 4109W - Capstone Independent Study in French and Francophone Studies [WI] (2.0 cr)
  - or FREN 4110V - Honors Capstone Independent Study in French and Francophone Studies [WI] (2.0 - 4.0 cr)
  - or ITAL 3459W - Senior Project [WI] (2.0 cr)
Twin Cities Campus
French Studies B.A.
French & Italian
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 to 57
- Degree: Bachelor of Arts

The major in French and Francophone studies introduces students to world cultures and history and prepares them for our interconnected, global future. The program cultivates students cultural sophistication and their skills in language, communication, analysis, and argument.

The major combines advanced language study with courses in three areas of concentration: linguistics, literature, and film. After placement exams, students begin their language study freshmen year while also taking a Gateways to French and Francophone studies course, taught in English, which introduces them to Francophone cultures from across the world and to the way we study them.

Students go on to study advanced French grammar, communication, and composition, and they can take language electives in phonetics, advanced oral communication, advanced writing (journalistic and literary prose), and the language and culture of business in France. They continue to hone their language skills in elective courses in linguistics, literature, and culture, most of which are taught entirely in French. Courses in linguistics cover sociolinguistics, the history of the French language, the structure and sounds of the language, and Old (medieval) French. Courses in literature do not confine themselves to the contemplation of aesthetics, but rather pose philosophical and historical questions (What is human nature? What new world did revolutionaries imagine? How do immigrants represent their new lives?). They cover all periods, including the Middle Ages, Renaissance, Classical Period, Enlightenment, Modernity, and Postmodernity. A number of courses focus on Francophone material from Africa, the Caribbean, and Quebec. Courses in cinema, from its first moments to the present, are also offered.

We encourage students to study abroad on one of the programs offered through the Learning Abroad Center. Students must complete the Gateways course, at least four 3xxx-level courses totaling 12 credits, and the senior project on the UMN TC campus, but they can transfer a great deal of coursework from programs abroad. We accept appropriate coursework from the Montpellier Integrated or Intensive Language programs, the Montpellier Advanced Summer program, the Paris CIEE program, the Senegal MSID program, and the National Student Exchange to a university in Quebec. However, students must consult with an advisor in the Department before committing to one of these programs.

Many students combine a French studies major with another CLA major in the arts, humanities, social sciences, or sciences. Students have also successfully combined a BA in French with degrees in other colleges, including the Carlson School of Management, the College of Design, the College of Education and Human Development, the College of Biological Sciences, the College of Science and Engineering, and the College of Food, and Agriculture, and Natural Resource Sciences. These students choose French as a second major, rather than a minor, because it allows them to reach a higher level of language proficiency while achieving a depth of cultural understanding that is not possible in the shorter program.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Complete the introductory 4-semester French language sequence or its equivalent. Students may declare the French Studies BA while FREN 1004 is in progress.

Students must formally declare a major within the department before completing the majority of the major elective requirements.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Prerequisites
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may place out through EPT or LPE examinations.

Take 0 or more course(s) totaling 0 - 20 credit(s) from the following:
- FREN 1001 - Beginning French I (5.0 cr)
FREN 1002 - Beginning French II (5.0 cr)
or FREN 1022 - Accelerated Beginning French (5.0 cr)
FREN 1003 - Intermediate French I (5.0 cr)
FREN 1004 - Intermediate French II (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete 4 semester(s) of French with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

CLA BA degrees require 18 upper-division (3xx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the French Studies BA is FREN.

Students must take at least 30 upper-division credits in the major.

At least 16 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. This includes learning abroad courses taken for resident credit.

At least 4 of the 10 upper-division FREN courses (not counting the capstone) must be taken in the Department of French and Italian at the UMN-TC campus.

Up to 18 credits of upper-division coursework from study abroad programs sponsored by or affiliated with the University of Minnesota may be counted towards the major.

Students may earn a BA or a minor in French, but not both. Any departmental major or minor may be combined with the French Advanced-Level Proficiency Certificate.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
FREN 15xx must be taken on the UMN-TC campus or through the May-term Abroad "Gateways" program sponsored by the Department.
• FREN 1501 - Gateways to French and Francophone Studies: English Only [AH, GP] (3.0 cr)
or FREN 1502 - Gateways to French and Francophone Studies: Bilingual [AH, GP] (3.0 cr)
or Other FREN 15xx Course
• FREN 3015 - Advanced French Grammar and Communication (3.0 cr)
• FREN 3016 - Advanced French Composition and Communication (3.0 cr)
• FREN 3101W - Methods in French and Francophone Studies [LITR, WI] (3.0 cr)

Electives
All courses are worth 3 credits. FREN 37xx courses do not count towards the Electives requirement. Note: most FREN linguistics courses require LING 3001 or FREN 3500 as a prerequisite.
Take exactly 7 course(s) totaling 21 or more credit(s) from the following:
Take 0 - 3 course(s) from the following:
• FREN 30xx
• Take 4 - 7 course(s) from the following:
  • FREN 31xx
  • FREN 32xx
  • FREN 33xx
  • FREN 34xx
  • FREN 35xx
  • FREN 36xx
  • FREN 38xx
• FREN 4970 - Directed Readings (1.0 - 4.0 cr)
• FREN 5xxx
Capstone
The capstone is completed in FREN 4101W, 4101V, 4109W or 4110V in the last or next-to-last semester before graduation. Research topics must be approved by course instructor. Papers are written in consultation with course instructor or other appropriate faculty. Students completing the capstone must do so on the UMN-TC campus.

Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:

Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the French Studies capstone, and they do not need to replace the 2 credits. Students who waive the French Studies capstone may complete the BA with a minimum of 30 upper-division credits.

- Capstone Seminar
  The capstone is completed in FREN 4101W, 4101V, 4109W, 4110V, and/or ITAL 3459W, in the last or next-to-last semester before graduation. Research topics must be approved by course instructor. Papers are written in consultation with course instructor or other appropriate faculty member. Honors students writing summa theses should take a total of 4 credits of capstone by combining 4101V and 4110V in their final year.
  - FREN 4101W - Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
  - FREN 4101V - Honors Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)

- Capstone Independent Study
  - FREN 4109W - Capstone Independent Study in French and Francophone Studies [WI] (2.0 cr)
  - FREN 4110V - Honors Capstone Independent Study in French and Francophone Studies [WI] (2.0 - 4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
  - FREN 3101W - Methods in French and Francophone Studies [LITR, WI] (3.0 cr)
  - FREN 3017W - Advanced Writing in French: Genre, Style, Rhetoric [WI] (3.0 cr)
  - FREN 4101W - Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
  - FREN 4101V - Honors Capstone Seminar in French and Francophone Studies [WI] (2.0 cr)
  - FREN 4109W - Capstone Independent Study in French and Francophone Studies [WI] (2.0 cr)
  - FREN 4110V - Honors Capstone Independent Study in French and Francophone Studies [WI] (2.0 - 4.0 cr)
Twin Cities Campus
French Studies Minor
French & Italian
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 38

The French studies minor includes the study of French language, and French and Francophone literature, culture and linguistics.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Complete the introductory 4-semester French language sequence or its equivalent. Students may declare the French Studies BA while FREN 1004 is in progress.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisites
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may place out through EPT or LPE examinations.
Take 0 or more course(s) totaling 0 - 20 credit(s) from the following:
- FREN 1001 - Beginning French I (5.0 cr)
- FREN 1002 - Beginning French II (5.0 cr)
or
- FREN 1022 - Accelerated Beginning French (5.0 cr)
- FREN 1003 - Intermediate French I (5.0 cr)
- FREN 1004 - Intermediate French II (5.0 cr)

Minor Requirements
Students are required to complete 4 semester(s) of French. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

At least 2 upper-division courses in the minor must be taken at the University of Minnesota - Twin Cities campus.

Up to 9 credits of upper-division coursework from study abroad programs sponsored by or affiliated with the University of Minnesota can be counted towards the minor.

Students may earn a BA or a minor in French, but not both. Any departmental major or minor may be combined with the French Advanced-Level Proficiency Certificate.

Core Courses
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
FREN 15xx must be taken on the University of Minnesota Twin Cities campus or through the May term Abroad "Gateways" program sponsored by the department.
- •FREN 1501 - Gateways to French and Francophone Studies: English Only [AH, GP] (3.0 cr)
- •FREN 1502 - Gateways to French and Francophone Studies: Bilingual [AH, GP] (3.0 cr)
or
- •other FREN 15xx Course
- •FREN 3015 - Advanced French Grammar and Communication (3.0 cr)
- •FREN 3016 - Advanced French Composition and Communication (3.0 cr)
- •FREN 3101W - Methods in French and Francophone Studies [LITR, WI] (3.0 cr)

Electives
All courses are worth 3 credits. FREN 37xx courses do not count towards the Electives requirement. Note: most FREN linguistics courses require LING 3001 or FREN 3500 as a prerequisite.
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
Take 0 - 1 course(s) from the following:
  • FREN 30xx
Take 1 - 2 course(s) from the following:
  • FREN 31xx
  • FREN 32xx
  • FREN 33xx
  • FREN 34xx
  • FREN 35xx
  • FREN 36xx
  • FREN 38xx
Twin Cities Campus
Gay, Lesbian, Bisexual, Transgender Minor
Gender, Women and Sexuality
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18

The minor focuses on the history, politics, and cultures of gay, lesbian, bisexual, and transgendered persons. Courses explore the diversity of GLBT communities, the history and present conditions of sexual identity formation, and the institutionalization of ideologies of sexuality. Core courses focus on issues related to the history, culture, social, and political formations and experiences of GLBT people, and also on GLBT/queer theory. Elective courses are drawn from lists of GLBT-focused courses (emphasizing GLBT issues/experiences) and of GLBT-component courses (having at least one-quarter of their content related to GLBT/queer theory or the history, culture, social, political formations, and experiences of GLBT people).

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Foundation Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
  or GWSS 1007 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)

Core Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- GLBT 3404 - Transnational Sexualities [GP] (3.0 cr)
  or GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
- GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- GLBT 4403 - Queering Theory (3.0 cr)
  GWSS 4403 - Queering Theory (3.0 cr)

Electives
Other courses may be used to meet this requirement with permission from the department.
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
- GLBT 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or AMST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or HIST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
- GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)
  or GWSS 3501 - Gay, Lesbian, Bisexual and Transgender Social Movements in the United States (3.0 cr)
- GLBT 3502 - Transgender Studies Now [DSJ] (3.0 cr)
  or GWSS 3502 - Transgender Studies Now [DSJ] (3.0 cr)
- GLBT 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
  or AMST 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
- GLBT 4204 - Sex, Love, & Disability (3.0 cr)
  or GWSS 4204 - Sex, Love, & Disability (3.0 cr)
- SOC 4521 - Love, Sex, & Marriage (3.0 cr)
  or SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
• Topic must be the sociology of sexuality to meet this requirement.
  • SOC 4090 - Topics in Sociology (3.0 cr)
Twin Cities Campus

Gender, Women and Sexuality Studies B.A.

Gender, Women and Sexuality

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 39 to 40
- Degree: Bachelor of Arts

The Department of Gender, Women, and Sexuality Studies at the University of Minnesota is committed to an inclusive study of gender and sexuality, informed by differences such as class, ethnicity, citizenship, disability, race, and age. Our intellectual goals for students include learning from and engaging with interdisciplinary scholarship on gender, women, and sexuality; understanding the intersections among race, gender, class, and sexuality, both in the United States and globally; developing critical and analytical skills by bringing together the methods of a range of disciplines; enhancing research skills and creative talents and developing new ideas and theories about gender and sexuality that challenge assumptions and contribute to social change.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Gender, Women and Sexuality Studies BA is GWSS.

At least 15 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a minor in gender, women and sexuality studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Course

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- GWSS 1001 - Gender, Power, and Everyday Life (3.0 cr)
- GWSS 1002 - Politics of Sex [SOCS, DSJ] (3.0 cr)
- GWSS 1004 - Screening Sex: Visual and Popular Culture [AH] (3.0 cr)
- GWSS 1005 - Engaging Justice [CIV] (3.0 cr)
- GWSS 1006 - Skin, Sex, and Genes [SOCS, TS] (3.0 cr)
- GWSS 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
  or ENGL 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
- GWSS 1007 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
  or GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)

Core Courses

Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:

Thought and Theory
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- GWSS 3102W - Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
- GWSS 3102V - Honors: Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)

**Methods**

This course is a prerequisite to the Capstone. Students should complete this course within one year of completing their Capstone Project.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- GWSS 4107 - Feminist Methods (3.0 cr)

**Electives**

Take exactly 8 course(s) totaling 24 or more credit(s) from the following:

### 3xxx-Level Courses

Take 0 - 5 course(s) from the following:

- GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
- GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- GWSS 3208 - Transgender Health (3.0 cr)
- GWSS 3215 - Bodies That Matter: Feminist Approaches to Disability Studies [DSJ] (3.0 cr)
- GWSS 3301W - Women Writers [LITR, WI] (3.0 cr)
- GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
- GWSS 3306 - Pop Culture Women [AH, DSJ] (3.0 cr)
- GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
- GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
- GWSS 3993 - Directed Study (1.0 - 12.0 cr)
- GWSS 3994 - Directed Research (1.0 - 12.0 cr)
- CHIC 3212 - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
- HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
- AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- or AMIN 5409 counts below as a 5xxx-level course
- GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
- GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
- GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- GWSS 3306W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- GWSS 4303W counts below as a 4xxx-level course
- GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
- or GLBT 3404 - Transnational Sexualities [GP] (3.0 cr)
- GWSS 3406 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)
- GWSS 3406H - Honors: Gender, Work, Labor [SOCS, GP] (3.0 cr)
- GWSS 3407 - Women in Early and Victorian America: 1600-1890 [HIS, DSJ] (3.0 cr)
- HIST 3347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)
- GWSS 3408 - Women in Modern America (3.0 cr)
- HIST 3348 - Women in Modern America (3.0 - 4.0 cr)
- GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- GWSS 3501 - Gay, Lesbian, Bisexual and Transgender Social Movements in the United States (3.0 cr)
- GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)
- GWSS 3502 - Transgender Studies Now [DSJ] (3.0 cr)
- GLBT 3502 - Transgender Studies Now [DSJ] (3.0 cr)
- GWSS 3505W - Girls, Girlhood, and Resistance [WI] (3.0 cr)
- GWSS 3505V - Girls, Girlhood, and Resistance [WI] (0.0 - 3.0 cr)
- GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
- HIST 3349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
- GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
- SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
- GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
- or CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)

### 4xxx and 5xxx-Level Courses

Take 3 or more course(s) from the following:

- AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- GWSS 4001 - Nations, Empires, Feminisms (3.0 cr)
- GWSS 4002 - Politics of Engagement and Social Justice [CIV] (3.0 cr)

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Information current as of September 02, 2020
• GWSS 4003 - Science, Bodies, Technologies (3.0 cr)
• GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
• GWSS 4980 - Directed Instruction (1.0 - 8.0 cr)
• GWSS 4993 - Directed Study (1.0 - 5.0 cr)
• GWSS 4994 - Directed Research (1.0 - 8.0 cr)
• GWSS 5190 - Topics: Theory, Knowledge, and Power (3.0 cr)
• GWSS 5290 - Topics: Biology, Health, and Environmental Studies (3.0 cr)
• GWSS 5390 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)
• GWSS 5490 - Topics: Political Economy and Global Studies (3.0 cr)
• GWSS 5993 - Directed Study (1.0 - 12.0 cr)
• GWSS 5994 - Directed Instruction (1.0 - 12.0 cr)
• GWSS 5995 - Directed Research (1.0 - 8.0 cr)
• AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• GWSS 4103 - Transnational Feminist Theory [GP] (3.0 cr)
  or GWSS 5104 - Transnational Feminist Theory (3.0 cr)
• GWSS 4204 - Sex, Love, & Disability (3.0 cr)
  or GLBT 4204 - Sex, Love, & Disability (3.0 cr)
• GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
  or CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
• GWSS 4403 - Queering Theory (3.0 cr)
  or GLBT 4403 - Queering Theory (3.0 cr)
• GWSS 4406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
  or GWSS 5406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
  or AFRO 4406 - Black Feminist Thought (3.0 cr)
  or AFRO 5406 - Black Feminist Thought (3.0 cr)

Capstone
In the capstone, students conduct independent research and writing in conjunction with a 3xxx-, 4xxx-, or 5xxx-level GWSS class. Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Gender, Women, and Sexuality Studies BA capstone, but they do need to replace the 6 credits with undergraduate GWSS coursework to reach the minimum credits required for the major.

Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
  Capstone project
    Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
      • GWSS 4108 - Senior Capstone: Writing (3.0 cr)
    with Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
      • GWSS 3xxx
      • GWSS 4xxx
      • GWSS 5xxx

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
• GWSS 3301W - Women Writers [LITR, WI] (3.0 cr)
• GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
  or GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
• GWSS 3102W - Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
  or GWSS 3102V - Honors: Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
• GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
  or AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• GWSS 3505W - Girls, Girlhood, and Resistance [WI] (3.0 cr)
  or GWSS 3505V - Girls, Girlhood, and Resistance [WI] (0.0 - 3.0 cr)
Twin Cities Campus
Gender, Women and Sexuality Studies Minor

Gender, Women and Sexuality
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 18 to 19

Gender, women, and sexuality studies offers an interdisciplinary curriculum that looks at issues of gender and sexuality in the United States and around the world, taking into account the intersections and interrelations of generation, economic status, race, geographic location, and other social and historical variables. Gender, women, and sexuality studies also seeks to transform traditional fields of study by incorporating new data, methods, theories, and frameworks developed by feminist scholars.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in gender, women and sexuality studies, but not both.

Foundation Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- GWSS 1001 - Gender, Power, and Everyday Life (3.0 cr)
- GWSS 1002 - Politics of Sex [SOCS, DSJ] (3.0 cr)
- GWSS 1004 - Screening Sex: Visual and Popular Culture [AH] (3.0 cr)
- GWSS 1005 - Engaging Justice [CIV] (3.0 cr)
- GWSS 1006 - Skin, Sex, and Genes [SOCS, TS] (3.0 cr)
- GWSS 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
  or ENGL 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
- GWSS 1007 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
  or GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)

Electives
Take 15 or more credit(s) from the following:
- GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
- GWSS 3032W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- GWSS 3208 - Transgender Health (3.0 cr)
- GWSS 3215 - Bodies That Matter: Feminist Approaches to Disability Studies [DSJ] (3.0 cr)
- GWSS 3301W - Women Writers [LITR, WI] (3.0 cr)
- GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
- GWSS 3306 - Pop Culture Women [AH, DSJ] (3.0 cr)
- GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
- GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
- GWSS 3993 - Directed Study (1.0 - 12.0 cr)
- GWSS 3994 - Directed Research (1.0 - 12.0 cr)
- GWSS 4001 - Nations, Empires, Feminisms (3.0 cr)
- GWSS 4002 - Politics of Engagement and Social Justice [CIV] (3.0 cr)
- GWSS 4003 - Science, Bodies, Technologies (3.0 cr)
- GWSS 4108 - Senior Capstone: Writing (3.0 cr)
- GWSS 4980 - Directed Instruction (1.0 - 8.0 cr)
- GWSS 4993 - Directed Study (1.0 - 5.0 cr)
- GWSS 4994 - Directed Research (1.0 - 8.0 cr)
- GWSS 5190 - Topics: Theory, Knowledge, and Power (3.0 cr)
- GWSS 5290 - Topics: Biology, Health, and Environmental Studies (3.0 cr)
- GWSS 5390 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)
- GWSS 5490 - Topics: Political Economy and Global Studies (3.0 cr)
- GWSS 5993 - Directed Study (1.0 - 12.0 cr)
- GWSS 5994 - Directed Instruction (1.0 - 12.0 cr)
• GWSS 5995 - Directed Research (1.0 - 8.0 cr)
• GWSS 4107 - Feminist Methods (3.0 cr)
• CHIC 3212 - Chicana Feminism: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
• HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
• AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
  or AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
• GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
  or GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
• GWSS 3102W - Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
  or GWSS 3102V - Honors: Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
• GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
• GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
  or GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
  or GLBT 3402 - Transnational Sexualities [GP] (3.0 cr)
  or GWSS 3406 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)
  or GWSS 3406H - Honors: Gender, Work, Labor [SOCS, GP] (3.0 cr)
• GWSS 3407 - Women in Early and Victorian America: 1600-1890 [HIS, DSJ] (3.0 cr)
  or HIST 3347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)
• GWSS 3408 - Women in Modern America (3.0 cr)
  or HIST 3348 - Women in Modern America (3.0 - 4.0 cr)
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
  or AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• GWSS 3501 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)
  or GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)
• GWSS 3502 - Transgender Studies Now [DSJ] (3.0 cr)
  or GLBT 3502 - Transgender Studies Now [DSJ] (3.0 cr)
• GWSS 3505W - Girls, Girlhood, and Resistance [WI] (3.0 cr)
  or GWSS 3505V - Girls, Girlhood, and Resistance [WI] (0.0 - 3.0 cr)
• GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
  or HIST 3349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
• GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
  or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
  or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
  or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• GWSS 4103 - Transnational Feminist Theory [GP] (3.0 cr)
  or GWSS 5104 - Transnational Feminist Theory (3.0 cr)
• GWSS 4204 - Sex, Love, & Disability (3.0 cr)
  or GLBT 4204 - Sex, Love, & Disability (3.0 cr)
• GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
  or CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
• GWSS 4403 - Queering Theory (3.0 cr)
  or GLBT 4403 - Queering Theory (3.0 cr)
• GWSS 4406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
  or GWSS 5406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
  or AFRO 4406 - Black Feminist Thought (3.0 cr)
  or AFRO 5406 - Black Feminist Thought (3.0 cr)
Twin Cities Campus
Geographic Information Science Minor
Geography, Environment, Society
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16

Students completing the interdisciplinary undergraduate minor develop knowledge and skills in geographic information science (GISc). GISc enhances students marketability in the workplace and provides many opportunities for intellectual and professional development. GISc examines geospatial technologies and their underlying principles, applications, and societal dimensions. These technologies include mapping, in-vehicle navigation systems, imagery taken from airplanes and satellites, analysis and modeling of social and natural processes, and visualization and data mining of complex information. Research using geospatial technologies addresses a diverse array of challenges in areas including water resources, environmental hazards, epidemiology, agriculture, housing, transportation, and more.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Several of the courses for the minor have prerequisites that must be satisfied first. Admission to the minor does not imply automatic enrollment in individual courses.

Students may combine the GIS minor with any other major or minor, except the Geography BS with a sub-plan in Geographic Information Science.

Core Courses
Take exactly 2 course(s) totaling 7 - 8 credit(s) from the following:

Basic
Take exactly 1 course(s) from the following:
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)

Advanced
Take exactly 1 course(s) from the following:
- ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
- FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)

Electives
No more than two courses with the same designator may be used to fulfill the Electives requirement.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:

CSCI
Take no more than 2 course(s) from the following:
- CSCI 4707 - Practice of Database Systems (3.0 cr)
- CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
- CSCI 5711 - From GPS and Virtual Globes to Spatial Computing (3.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- or CSCI 4041H (Inactive) (4.0 cr)

ESPM
Take no more than 2 course(s) from the following:
- ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
- ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)

FNRM
Take no more than 2 course(s) from the following:
• FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
• FNRM 4515 - Field Resource Survey (1.0 cr)
• FNRM 5462 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
• FNRM 5216 - Geodesy, Coordinate, and Surveying Calculations for GIS Professionals (1.0 cr)

• GEOG
Take no more than 2 course(s) from the following:
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 cr)
• GEOG 5543 - Advanced Geocomputing (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• GEOG 5588 - Advanced Geovisualization (3.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)

• GIS
Take no more than 2 course(s) from the following:
• GIS 5571 - ArcGIS I (3.0 cr)
• GIS 5572 - ArcGIS II (3.0 cr)
• GIS 5574 - Web GIS and Services (3.0 cr)
• GIS 5577 - Spatial Database Design and Administration (3.0 cr)
• GIS 5578 - GIS Programming (3.0 cr)

• SOIL
Take no more than 2 course(s) from the following:
• SOIL 4111 - Introduction to Precision Agriculture (3.0 cr)
Twin Cities Campus
Geography B.A.
Geography, Environment, Society
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 32 to 39
- Degree: Bachelor of Arts

The B.A. in Geography answers the need in our society for an integrated, critical understanding of the world's peoples, cultures, and societies, as well as its environments and landscapes, natural and human made -- at every scale from neighborhoods and cities, to nations, regions, and the world as a whole. Many contemporary issues are fundamentally geographic. Why are there social and spatial inequalities in the world's cities and regions? What roles do geographies of social difference around race, class, ethnicity, and gender play in constructing and resisting power structures in society at large? Why does it make sense to view cultural practices like music or tourism as contested traditions in which geographic difference matters? What new relationships are forming around climate change and human and ecological health? Why is it important to understand struggles over the meaning of common lands and other natural resources? Why does climate change vary from place to place? What are the local vulnerabilities to flood hazards or the local prospects for renewable wind energy?

Geography is a way of seeing which has unparalleled applicability in the world today. It is a meeting place for the study of social, political, cultural, and environmental changes, as these occur in cities, regions, countries, and globally. Students majoring in Geography or adding it as a double major can build an area of expertise matching their interests and imparting knowledge and skills to move them forward in their desired professional trajectory. With the assistance of our Undergraduate Advisor students choose courses to develop a theme in the major: in Urban Geography students focus on the social-spatial processes and patterns that result from human beings living in cities, including cities themselves as expressions of collective human life. In Environment, Health and Society, attention is drawn to the intersection between the human and natural world and the way those intersections impact human life, human health, and the natural world. In Economy and Development Studies the emphasis falls on the economic relationships and power differentials among different parts of the world. Environmental Geography specializes in the scientific study of natural processes and systems from the perspective of the physical and biological sciences. In Geographic Information Science (GIS), students learn how to use different spatial software packages to use quantitative and qualitative data to analyze and visualize issues of geographic importance.

The Geography B.A. incorporates all of CLAs career competencies and prepares students for numerous career paths. Geographers have found a place in the for profit and non-profit sectors, in land use and natural resource planning agencies and departments at all levels of government, and more. Many Geography majors have become teachers or been accepted to graduate programs.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Geography BA is GEOG.

Some GEOG 5xxx-level courses are graduate-level courses and will require departmental consent.
A given course may only count towards one major requirement.

See major advisor for final approval of individual program.

At least 14 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn up to one undergraduate degree in the geography program: a BA, a BS, or a minor. Students in the Geography BA or minor may combine those programs with a major or minor in Urban Studies, or the other departmental minors, Public Health and Geographic Information Science.

All CLA first-year students must complete the First-Year Experience course sequence.

**Breadth Requirement**

Students may count two 1xxx courses toward the breadth requirement.

**Human Geography**

Take exactly 2 course(s) totaling 6 or more credit(s) from the following:

- GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
  or GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)

**Environmental Geography**

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:

- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
  or GEOG 1403H - Honors: Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
- GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
  or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
  or GEOG 5431 - Plant and Animal Geography (3.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
  or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)

**Geographic Information Science**

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:

- GEOG 1502 - Mapping Our World [TS, SOCS] (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3541 - Principles of Geocomputing (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

**Ways of Knowing**

The Ways of Knowing requirement provides a theory-intensive overview of the discipline. Students are encouraged to take 3-5 of their breadth courses and electives before taking their Ways of Knowing course.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

- GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)

**Electives**

Students should work with the departmental advisor to develop a coherent set of electives that meet specific educational goals. Students may petition to take GIS courses when prerequisites have been fulfilled.

Take 5 or more course(s) totaling 15 or more credit(s) from the following:

- GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
- GEOG 3111 - Geography of Minnesota (3.0 cr)
- GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
- GEOG 3211 - East Asia (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
- GEOG 3377 - Music in the City [DSJ, AH] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3541 - Principles of Geocomputing (3.0 cr)
- GEOG 3605 - Geographic Perspectives on Planning (3.0 cr)
- GEOG 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
- GEOG 3900 - Topics in Geography (3.0 cr)
- GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
- GEOG 3992 - Directed Reading (1.0 - 8.0 cr)
- GEOG 3993 - Directed Studies (1.0 - 8.0 cr)
- GEOG 3994 - Directed Research (1.0 - 8.0 cr)
- GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
- GEOG 5361 - Geography and Real Estate (4.0 cr)
- GEOG 5385 - Globalization and Development: Political Economy (4.0 cr)
- GEOG 5399 - Rural Landscapes and Environments (4.0 cr)
- GEOG 5426 - Climatic Variations (3.0 cr)
- GEOG 5530 - Cartography Internship (2.0 - 7.0 cr)
- GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 5543 - Advanced Geocomputing (3.0 cr)
- GEOG 5562 - GIS Development Practicum (3.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GEOG 5588 - Advanced Geovisualization (3.0 cr)
- GEOG 5900 - Topics in Geography (3.0 cr)
- GIS 5555 - Basic Spatial Analysis (3.0 cr)
- GIS 5571 - ArcGIS I (3.0 cr)
- GIS 5578 - GIS Programming (3.0 cr)
- URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
- URBS 3771 - Fundamentals of Transit (3.0 cr)
- URBS 3861 - Financing Cities (3.0 cr)
- URBS 3871 - A Suburban World (3.0 cr)
- GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
  or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
- GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
  or GEOG 5431 - Plant and Animal Geography (3.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
  or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)

Capstone
The Capstone may include data collection, reading, reflection, collaboration, and interpretation, and ends with writing a document. As
the culmination of undergraduate training, each project develops from an interest or specialization deriving from previous courses.
Students who double major and choose to complete the capstone requirement in their other major may waive the Geography BA
Capstone, but are still responsible for taking a minimum of 32 total credits within the major.
Take exactly 1 course(s) totaling 2 - 4 credit(s) from the following:
Option 1: Seminar
Note: this option is not available every semester.
• GEOG 3985W - Senior Project Seminar [WI] (4.0 cr)
or GEOG 3985V - Honors Senior Project Seminar [WI] (4.0 cr)

Option 2: Directed Research
Note: this option requires instructor consent prior to the first day of classes.
• GEOG 3996 - Senior Project Directed Research (3.0 - 4.0 cr)

Option 3: Supplemental Project
Note: this option requires instructor consent prior to the first day of classes and concurrent registration in a breadth or elective course.
• GEOG 3997 - Senior Project (2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
• URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• GEOG 3985W - Senior Project Seminar [WI] (4.0 cr)
or GEOG 3985V - Honors Senior Project Seminar [WI] (4.0 cr)
Twin Cities Campus
Geography B.S.
Geography, Environment, Society
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 44 to 59
- Degree: Bachelor of Science

From climate to culture, urban settings to rural land uses, human society to environment, the B.S. in Geography provides students with the tools to understand our world, its processes, and all of its inhabitants. The Geography B.S., with its emphasis on the application of scientific knowledge and critical thinking to a wide variety of contemporary geographic problems, is an exceedingly relevant degree. Students specialize in one of two areas, Environmental Geography or Geographic Information Science (GIS). In Environmental Geography students study natural environments and systems, both in themselves and as they relate to human beings, including weather and climate patterns, climate change, plant and animal distributions, forest fires, and natural resources such as water, wind, and forestland. GIS collects geographic information, creates spatial analytical methods, and uses cutting-edge technologies to advance our knowledge of natural and societal phenomena and processes across space and time. Environmental Geography and GIS are highly employable fields that offer opportunities to study some of the most urgent problems facing society today: How do humans affect the climate? Why are climate-change impacts not the same everywhere? What places are most prone to fire, flooding and other hazards, and why? In a city with many different people and many different needs, where is the best place to locate a new hospital or school? How should electoral boundaries be drawn to ensure fair representation? How can we ensure that everyone has access to the goods and services they need or reduce spatial disparities? A B.S. in Geography provides the fundamental knowledge and analytical skills to tackle these and many other fundamentally geographic questions.

The B.S. in Geography directly benefits from being a science field located in a liberal arts department. As noted by the U.S. National Academies, the liberal arts are of increasing importance in scientific and technical fields because they train students to think broadly and in an integrative way. Geography majors at the University of Minnesota report high rates of satisfaction with the major. The B.S. in Geography supports students in connecting the sciences and the liberal arts by including a broad palette of coursework in Geography such as urban geography, economic geography, and social-cultural geographies. The capstone experience, taken near the end of the student's studies, readies students to move forward by encouraging them to synthesize what they have learned.

A wide variety of career options are open to students with a B.S. in Geography. Local, regional, and federal agencies seek geographers for city and regional planning, natural resource management, transportation, and community development positions. Private industry consulting, non-profit and marketing firms, the non-profit sector, and local, national, and transnational non-governmental organizations seek the geographic skills taught in the Geography B.S. Many Geography undergraduate majors obtain careers in education and many go on to graduate school.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Some GEOG 5xxx-level courses are graduate-level courses and will require departmental consent.

A given course may only count towards one major requirement.

See major advisor for final approval of individual program.
At least 14 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn up to one undergraduate degree in the geography program: a BA, a BS, or a minor. Students in the Geography BS may also seek a major or minor in urban studies, or the minor in public health. Students who declare the Geographic Information Science sub-plan in the BS may not minor in Geographic Information Science.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Ways of Knowing**
The Ways of Knowing requirement provides a theory-intensive overview of the discipline. Students are encouraged to take 3-5 of their breadth courses and electives before taking their Ways of Knowing course.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)

**Capstone**
The Capstone may include data collection, reading, reflection, collaboration, and interpretation, and ends with writing a document. As the culmination of undergraduate training, each project develops from an interest or specialization deriving from previous courses. Students who double major and choose to complete the capstone requirement in their other major may waive the geography BS capstone, and they do not need to replace the 2 credits.

Take exactly 1 course(s) totaling 2 - 4 credit(s) from the following:

- **Option 1: Seminar**
  Note: this option is not available every semester.
  - GEOG 3985W - Senior Project Seminar [WI] (4.0 cr)
  or GEOG 3985V - Honors Senior Project Seminar [WI] (4.0 cr)

- **Option 2: Directed Research**
  Note: this option requires instructor consent prior to the first day of classes.
  - GEOG 3996 - Senior Project Directed Research (3.0 - 4.0 cr)

- **Option 3: Supplemental Project**
  Note: this option requires instructor consent prior to the first day of classes and concurrent registration in a breadth or elective course.
  - GEOG 3997 - Senior Project (2.0 cr)

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
- URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
- GEOG 3985W - Senior Project Seminar [WI] (4.0 cr)
  or GEOG 3985V - Honors Senior Project Seminar [WI] (4.0 cr)

**Program Sub-plans**
Students are required to complete one of the following sub-plans.

**Environmental Geography**

**Breadth Requirement**
Students may count two 1xxx courses toward the breadth requirement.

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

**Human Geography**

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
or GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)

Environmental Geography
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
or GEOG 1403H - Honors: Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
or GEOG 5431 - Plant and Animal Geography (3.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)

Geographic Information Science
Take exactly 2 course(s) totaling 6 or more credit(s) from the following:
• GEOG 1502 - Mapping Our World [TS, SOCS] (3.0 cr)
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 cr)
or GEOG 5541 - Principles of Geocomputing (3.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

Supporting Courses
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
Mathematics
Take 0 - 3 course(s) from the following:
• MATH 1151 - Precalculus II [MATH] (3.0 cr)
or MATH 1155 - Intensive Precalculus [MATH] (5.0 cr)
• MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
• MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
• Basic Statistics
Take 0 - 1 course(s) from the following:
• EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
• ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• SOC 3811 - Social Statistics [MATH] (4.0 cr)
or SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)
• Intermediate & Advanced Statistics
Take 0 - 3 course(s) from the following:
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)

• Programming & Logic  
  Take 0 - 3 course(s) from the following:  
  • PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)  
  • CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr) 
    or 
  CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr) 
    or 
  CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr) 
    or 
  CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr) 
  • CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr) 
    or 
  CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr) 
    or 
  CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)  
  • GEOG 3541 - Principles of Geocomputing (3.0 cr)  
    or 
  GEOG 5541 - Principles of Geocomputing (3.0 cr)  

• Remote Sensing, GPS, and GIS Applications  
  Take 0 - 3 course(s) from the following:  
  • CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr) 
  • ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr) 
  • ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr) 
  • FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr) 
  • FNRM 3362 - Drones: Data, Analysis, and Operations (3.0 cr) 
  • FNRM 3462 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)

• Physical Sciences  
  Take 0 - 3 course(s) from the following:  
  • CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)  
    CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
  • CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)  
    CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)  
  • CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)  
    CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)  
  • CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)  
    CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)  
  • PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)  
    or 
  PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr) 
    or 
  PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr) 
    or 
  PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr) 
    or 
  PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)  
  • PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)  
    or 
  PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr) 
    or 
  PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr) 
    or 
  PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)  

• Earth Sciences  
  Take 0 - 3 course(s) from the following:  
  • ESCL 2201 - Solid Earth Dynamics (4.0 cr)  
  • ESCL 2202 - Earth History (4.0 cr)  
  • ESCL 2203 - Earth Surface Dynamics (4.0 cr)  
  • ESCL 2301 - Mineralogy (3.0 cr)  
  • GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)  
  • GEOG 3423 - Urban Climatology (3.0 cr)  
  • SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)  
  • ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr) 
    or 
  ESCI 1101 - Introduction to Geology (lecture only) [ENV] (3.0 cr)  
  • ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)  
    or 
  ESCI 1106 - Oceanography [ENV] (3.0 cr)  
  • ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)  
    or 
  ESCI 5102 - Climate Change and Human History (3.0 cr)  
  • ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr) 
    or 
  ESCI 5402 - Science and Politics of Global Warming (3.0 cr)  
  • GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr) 
    or 
  ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)  

• Biological & Environmental Sciences  
  Take 0 - 3 course(s) from the following:  
  • ANTH 1001 - Human Evolution [BIOL] (4.0 cr)  
  • EEB 4068 - Plant Physiological Ecology (3.0 cr)  
  • EEB 4611 - Biogeochemical Processes (3.0 cr)  
  • FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
• GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• PMB 2022 - General Botany (3.0 cr)
• BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1001H - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)
• EEB 3407 - Ecology (3.0 cr)
or EEB 3807 - Ecology (4.0 cr)
or EEB 5407 - Ecology (3.0 cr)

Electives

Students should work with the departmental advisor to develop a coherent set of electives that meet specific educational goals.

Take exactly 5 course(s) totaling 15 or more credit(s) from the following:

Environmental Geography & Geographic Information Sciences Electives

Students may petition to take additional courses under the GIS designator for major credit when prerequisites have been met.

Take 3 - 5 course(s) totaling 9 or more credit(s) from the following:

Environmental Geography Electives

Take 0 - 5 course(s) from the following:
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
or GEOG 5431 - Plant and Animal Geography (3.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)

Geographic Information Sciences Electives

Take 0 - 5 course(s) from the following:
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• GIS 5555 - Basic Spatial Analysis (3.0 cr)
• GIS 5571 - ArcGIS I (3.0 cr)
• GIS 5574 - Web GIS and Services (3.0 cr)
• GIS 5578 - GIS Programming (3.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 cr)
or GEOG 5541 - Principles of Geocomputing (3.0 cr)
• GEOG 3551 - Principles of Geographic Information Science (4.0 cr)
or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

Additional Geography Electives

Take 0 - 2 course(s) totaling at most 8 credit(s) from the following:
• GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
• GEOG 3111 - Geography of Minnesota (3.0 cr)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GEOG 3211 - East Asia (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
• GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
• GEOG 3377 - Music in the City [DSJ, AH] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 3605 - Geographic Perspectives on Planning (3.0 cr)
• GEOG 3986 - Internship for Academic Credit (1.0 - 4.0 cr)
• GEOG 3990 - Topics in Geography (3.0 cr)
• GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
• GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
• GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
• GEOG 5361 - Geography and Real Estate (4.0 cr)
• GEOG 5393 - Rural Landscapes and Environments (4.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• URBS 3861 - Financing Cities (3.0 cr)
• URBS 3871 - A Suburban World (3.0 cr)
• GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
or GEOG 5374 - The City in Film (4.0 cr)

Geographic Information Science

Breadth Requirement
Students may count two 1xxx courses toward the breadth requirement.

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

Human Geography
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
• GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
or GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)

Environmental Geography
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
or GEOG 1403H - Honors: Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
or GEOG 5431 - Plant and Animal Geography (3.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)

Geographic Information Science
Take exactly 2 course(s) totaling 7 - 8 credit(s) from the following:
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 cr)
or GEOG 5541 - Principles of Geocomputing (3.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

Supporting Courses
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:

Mathematics
Take 0 - 3 course(s) from the following:
• MATH 1151 - Precalculus II [MATH] (3.0 cr)
or MATH 1155 - Intensive Precalculus [MATH] (5.0 cr)
• MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
• MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
• Basic Statistics
Take 0 - 1 course(s) from the following:
• EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
• ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 3272H - Applied Biostatistics (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• SOC 3811 - Social Statistics [MATH] (4.0 cr)
or SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)

• Intermediate & Advanced Statistics
Take 0 - 3 course(s) from the following:
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)

• Programming & Logic
Take 0 - 3 course(s) from the following:
• PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
• CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 1133H - Honors Introduction to Programming Concepts (4.0 cr)
• CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
or CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 cr)
or GEOG 5541 - Principles of Geocomputing (3.0 cr)

• Remote Sensing, GPS, and GIS Applications
Take 0 - 3 course(s) from the following:
• CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr)
• ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
• FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
• FNRM 3362 - Drones: Data, Analysis, and Operations (3.0 cr)
• FNRM 3462 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)

• Physical Sciences
Take 0 - 1 course(s) from the following:
• CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
• CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
• CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
• CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
• CHEM 1066 - Chemical Principles II [PHYS] (3.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
• CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
• PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
or PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
or PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
or PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

• Earth Sciences
Take 0 - 1 course(s) from the following:
• ESCI 2201 - Solid Earth Dynamics (4.0 cr)
• ESCI 2202 - Earth History (4.0 cr)
• ESCI 2203 - Earth Surface Dynamics (4.0 cr)
• ESCI 2301 - Mineralogy (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)  
• GEOG 3423 - Urban Climatology (3.0 cr)  
• SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)  
• ESKI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)  
  or ESKI 1101 - Introduction to Geology (lecture only) [ENV] (3.0 cr)  
• ESKI 1006 - Oceanography [PHYS, ENV] (4.0 cr)  
  or ESKI 1106 - Oceanography [ENV] (3.0 cr)  
• ESKI 3002 - Climate Change and Human History [ENV] (3.0 cr)  
  or ESKI 5102 - Climate Change and Human History (3.0 cr)  
• ESKI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)  
  or ESKI 5402 - Science and Politics of Global Warming (3.0 cr)  
• GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)  
  or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)  

• Biological & Environmental Sciences  
  Take 0 - 1 course(s) from the following:  
  • ANTH 1001 - Human Evolution [BIOL] (4.0 cr)  
  • EEB 4068 - Plant PhysiologicalEcology (3.0 cr)  
  • EEB 4611 - Biogeochemical Processes (3.0 cr)  
  • FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)  
  • GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)  
  • GEOG 3423 - Urban Climatology (3.0 cr)  
  • PMB 2022 - General Botany (3.0 cr)  
  • BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)  
    or BIOL 1001H - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)  
  • BIOL 1009 - General Biology [BIOL] (4.0 cr)  
    or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)  
  • EEB 3407 - Ecology (3.0 cr)  
    or EEB 3807 - Ecology (4.0 cr)  
  • EEB 5407 - Ecology (3.0 cr)  

Electives  
Students should work with the departmental advisor to develop a coherent set of electives that meet specific educational goals.  
Take exactly 5 course(s) totaling 15 or more credit(s) from the following:  

Geographic Information Sciences Electives  
Students may petition to take additional courses under the GIS designator for major credit when prerequisites have been met.  
Take 3 or more course(s) totaling 9 or more credit(s) from the following:  
• GEOG 3511 - Principles of Cartography (4.0 cr)  
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)  
• GEOG 3541 - Principles of Geocomputing (3.0 cr)  

Advanced Geographic Information Sciences Electives  
Take 1 or more course(s) totaling 3 or more credit(s) from the following:  
• GEOG 5531 - Numerical Spatial Analysis (4.0 cr)  
• GEOG 5541 - Principles of Geocomputing (3.0 cr)  
• GEOG 5561 - Principles of Geographic Information Science (4.0 cr)  
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)  
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)  
• GIS 5555 - Basic Spatial Analysis (3.0 cr)  
• GIS 5571 - ArcGIS I (3.0 cr)  
• GIS 5574 - Web GIS and Services (3.0 cr)  
• GIS 5578 - GIS Programming (3.0 cr)  

Environmental Geography Electives  
Take 0 - 2 course(s) totaling at most 8 credit(s) from the following:  
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)  
• GEOG 3423 - Urban Climatology (3.0 cr)  
• GEOG 5426 - Climatic Variations (3.0 cr)  
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)  
• GEOG 3431 - Plant and Animal Geography (3.0 cr)  
  or GEOG 5431 - Plant and Animal Geography (3.0 cr)  
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)  
  or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)  

Additional Geography Electives  
Take 0 - 2 course(s) totaling at most 8 credit(s) from the following:  
• GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)  
• GEOG 3111 - Geography of Minnesota (3.0 cr)  
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)  

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Information current as of September 02, 2020
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOG 3211</td>
<td>East Asia (3.0 cr)</td>
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<tr>
<td>GEOG 3371W</td>
<td>Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)</td>
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<td>GEOG 3373</td>
<td>Changing Form of the City [HIS, GP] (3.0 cr)</td>
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<td>GEOG 3376</td>
<td>Political Ecology of North America [ENV] (3.0 cr)</td>
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<tr>
<td>GEOG 3377</td>
<td>Music in the City [DSJ, AH] (3.0 cr)</td>
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<td>GEOG 3379</td>
<td>Environment and Development in the Third World [SOCS, ENV] (3.0 cr)</td>
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<td>GEOG 3381W</td>
<td>Population in an Interacting World [SOCS, GP, WI] (3.0 cr)</td>
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<td>GEOG 3388</td>
<td>Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)</td>
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<td>GEOG 3411W</td>
<td>Geography of Health and Health Care [WI] (3.0 cr)</td>
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<td>GEOG 3605</td>
<td>Geographic Perspectives on Planning (3.0 cr)</td>
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<td>GEOG 3896</td>
<td>Internship for Academic Credit (1.0 - 4.0 cr)</td>
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<td>GEOG 3900</td>
<td>Topics in Geography (3.0 cr)</td>
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<tr>
<td>GEOG 3973</td>
<td>Geography of the Twin Cities [SOCS] (3.0 cr)</td>
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<tr>
<td>GEOG 4001</td>
<td>Modes of Geographic Inquiry (4.0 cr)</td>
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<tr>
<td>GEOG 4002W</td>
<td>Environmental Thought and Practice [WI] (3.0 cr)</td>
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<tr>
<td>GEOG 5361</td>
<td>Geography and Real Estate (4.0 cr)</td>
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<tr>
<td>GEOG 5393</td>
<td>Rural Landscapes and Environments (4.0 cr)</td>
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<td>URBS 3771</td>
<td>Fundamentals of Transit (3.0 cr)</td>
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<td>URBS 3861</td>
<td>Financing Cities (3.0 cr)</td>
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<td>URBS 3871</td>
<td>A Suburban World (3.0 cr)</td>
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<tr>
<td>GEOG 3145</td>
<td>The Islamic World [SOCS, GP] (3.0 cr)</td>
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<tr>
<td>GEOG 3331</td>
<td>Geography of the World Economy [SOCS, GP] (3.0 cr)</td>
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<tr>
<td>GEOG 3361W</td>
<td>Geography and Public Policy [WI] (3.0 cr)</td>
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<td>GEOG 3374W</td>
<td>The City in Film [AH, WI] (4.0 cr)</td>
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<td>GEOG 5374</td>
<td>The City in Film (4.0 cr)</td>
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Twin Cities Campus
Geography Minor

Geography, Environment, Society
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 14

The study of Geography answers the need in our society for an integrated, critical understanding of the world’s peoples, cultures, and societies, as well as its environments and landscapes, natural and human made - at every scale from neighborhoods and cities, to regions, countries, and around the earth itself. A minor in geography is an excellent accompaniment to majors in the social sciences, humanities, natural sciences and technical disciplines. With a minor in geography, students will develop a spatial way of thinking about world and local problems that is grounded in the idea that where things happen, and how places are connected, shape the way that human and natural systems function. It can help students build a nuanced understanding of cities, climate, the global economy, human impacts on the environment, social inequality among other issues. Students may also take courses in the geographic information sciences and build skills in spatial analysis and digital mapping. Students may develop a specialization in human/social geography, environmental geography, or spatial analysis, or may combine courses of interest to create a unique area of specialization.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn up to one undergraduate degree in the geography program: a BA, a BS, or a minor. Students in the Geography BA or minor may combine those programs with a major or minor in Urban Studies, or the other departmental minors, Public Health and Geographic Information Science.

Electives
Take 14 or more credit(s) from the following:
- GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
- GEOG 3111 - Geography of Minnesota (3.0 cr)
- GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
- GEOG 3211 - East Asia (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
- GEOG 3377 - Music in the City [DSJ, AH] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GEOG 3387 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3541 - Principles of Geocomputing (3.0 cr)
- GEOG 3573 - Introduction to Digital Mapping: ArcGIS Basis (2.0 cr)
- GEOG 3605 - Geographic Perspectives on Planning (3.0 cr)
- GEOG 3886 - Internship for Academic Credit (1.0 - 4.0 cr)
- GEOG 3900 - Topics in Geography (3.0 cr)
- GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
- GEOG 3992 - Directed Reading (1.0 - 8.0 cr)
- GEOG 3993 - Directed Studies (1.0 - 8.0 cr)
- GEOG 3994 - Directed Research (1.0 - 8.0 cr)
- GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
- GEOG 5361 - Geography and Real Estate (4.0 cr)
- GEOG 5385 - Globalization and Development: Political Economy (4.0 cr)
- GEOG 5393 - Rural Landscapes and Environments (4.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)
• GEOG 5530 - Cartography Internship (2.0 - 7.0 cr)
• GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 5543 - Advanced Geocomputing (3.0 cr)
• GEOG 5562 - GIS Development Practicum (3.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• GEOG 5588 - Advanced Geovisualization (3.0 cr)
• GEOG 5900 - Topics in Geography (3.0 cr)
• GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
  or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
  or GEOG 5431 - Plant and Animal Geography (3.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
  or GEOG 5839 - Introduction to Dendrochronology (3.0 cr)
Twin Cities Campus

German Advanced-Level Proficiency Certificate

German, Nordic, Slavic & Dutch

College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 6 to 8
- This certificate requires an intensive German-language immersion experience. See certificate requirements for the options to fulfill this requirement.
- Degree: German Advanced-Level Proficiency Certificate

This certificate is designed for students interested in achieving advanced-level proficiency in German and having their skills formally recognized. People who have advanced-level proficiency in German possess the speaking, reading, writing and listening skills sufficient to satisfy the requirements of everyday situations at home and at work. They also generally understand and are understood by native speakers of German. For an extended definition of advanced-level proficiency, please visit the American Council on the Teaching of Foreign Languages website: www.actfl.org/sites/default/files/pdfs/ACTFLProficiencyGuidelines2012_FINAL.pdf

The Certificate of Advanced-Level Proficiency is open to all University of Minnesota undergraduate students, especially those who seek higher levels of German proficiency in order to become more competitive for graduate or professional programs, careers with domestic German-speaking populations, or international careers.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

German LPE
Pass the German Language Proficiency Exam (LPE). This exam is typically taken after 4 semesters of college-level study, or the equivalent. For more information, please visit http://langtest.umn.edu/lpe.

Composition, Communication, and Content-Based Courses
There are three options for completing this requirement. The first option is to take GER 3011W or its equivalent abroad and one pre-approved content-based course. The second option is to take two pre-approved content-based courses. The third option is to take both GER 3011W and GER 3012W.
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:

German Composition and Communication
- GER 3011W - Conversation and Composition [WI] (4.0 cr)
- GER 3012W - Conversation and Composition [WI] (3.0 cr)

-Pre-approved content-based courses
GER 3014, 5011, or any GER 31xx, 34xx, or 35xx may count as a pre-approved content-based course, provided they meet the writing requirements.
- A content-based course is defined as one that is either taught almost exclusively in German, or for which the discussion section is delivered in German, and explores literature, culture, media, or other issues from an academic perspective. A minimum of 10 pages of written work in German must be completed, including at least one single assignment of at least 5 pages. This same requirement must be met if the courses are taken abroad.

Take 0 - 2 course(s) from the following:
- GER 3014 - German Media (3.0 cr)
- GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
• GER 3421 - 18th-Century German Literature (3.0 cr)
• GER 3431 - 19th-Century Literature (3.0 cr)
• GER 3441 - 20th-/21st-Century Literature (3.0 cr)
• GER 3501 - Contemporary Germany (3.0 cr)
• GER 3510 - Topics in German Studies (3.0 cr)
• GER 5011 - Advanced Conversation and Composition (3.0 cr)

German Language Immersion
Participate in an intensive German language immersion experience. There are three options for completing this requirement:
Option 1
Participation in an academic study abroad experience of at least six weeks that includes at least one course taught in German
or Option 2
Completion of an pre-approved immersion experience
or Option 3
Completion of two full semesters of weekly language exchange with a native speaker through the CLA Language Centers TandemPlus program including 15 hours devoted to conversation in German

Self-assessment Instrument
Take the self-assessment and use this information to gauge your own proficiency level. It is strongly recommended that you do not attempt the ACTFL exam until the self-assessment results indicate that you may have achieved advanced-level proficiency.

Critical Reflection Essay
Submit a short essay (of 450-600 words) written in English that; (1) reflects on your German self-assessment results; (2) describes your current level of German language proficiency; (3) demonstrates how you have used your language and cultural understanding skills at the University and beyond through completion of some or all of the Additional Recommended Experiences listed below.

Achieve Advanced-Low or Higher on the ACTFL
When your self-assessment results indicate that you may be at advanced-level proficiency, you may take the ACTFL Advanced-level Exam. In order to complete your certificate, you must achieve a rating of Advanced-Low or higher in all 4 sections: speaking, writing, listening and reading.

The cost for 4 sections of the ACTFL is $200. However, if you participate in the PACE Project you will be able to take the reading, listening and speaking exams at no cost and pay only for the writing exam.

Additional Recommended Experiences to Increase German Language Proficiency
- Study abroad in a German-speaking country for at least a semester (this is highly recommended).
- Additional upper division coursework taught in German (see the Certificate website).
- Service learning, volunteer work, or internship in a German-speaking context for at least a semester.
- Participation in TandemPlus.
- Participation in the GSD House.
- Spend an average of 15-20 hours per week outside of class actively using your German (reading, writing, speaking, listening)
Twin Cities Campus

German Minor

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 36

German is one of the world’s major languages and is the most widely spoken language in the European Union after English. Minors in German study the spoken language, as well as the literature, media, and culture of Germany, Austria, and Switzerland. German speakers have played a prominent role in literature, art, music, and philosophy. Made in Germany, Austria, or Switzerland are labels that signal quality of products, design, and lifestyle.

The German minor opens the door to many career paths in business, politics, education, engineering, and the sciences, and the fine arts.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Beginning and Intermediate German

These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.

Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- GER 1001 - Beginning German (5.0 cr)
- GER 1002 - Beginning German (5.0 cr)
  or GER 1022 - Beginning German Review (5.0 cr)
- GER 1003 - Intermediate German (5.0 cr)
- GER 1004 - Intermediate German (5.0 cr)

Minor Requirements

Students are required to take 4 semester(s) of German.

Courses that are taught in English may be used for the minor if substantial work is done in German, as directed by the instructor of the courses or by the director of undergraduate studies.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota Twin Cities campus. In the German minor, this does not include learning abroad courses taken for resident credit.

Students with a German, Scandinavian, Dutch major may elect a minor in German, but no courses may count for both the major and the minor.

Core Courses

Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:
- GER 3011W - Conversation and Composition [WI] (4.0 cr)
- GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)

Electives

Take 9 or more credit(s) from the following:
- GER 3012W - Conversation and Composition [WI] (3.0 cr)
- GER 3014 - German Media (3.0 cr)
- GER 3021 - Business German (3.0 cr)
- GER 3421 - 18th-Century German Literature (3.0 cr)
- GER 3431 - 19th-Century Literature (3.0 cr)
GER 3441 - 20th-/21st-Century Literature (3.0 cr)
GER 3501 - Contemporary Germany (3.0 cr)
GER 3510 - Topics in German Studies (3.0 cr)
GER 3520 - Topics in Austrian and Central European Culture (3.0 cr)
GER 3551 - Sustainability in Germany: Recreation, Education, Innovation [GP] (3.0 cr)
GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
GER 3641 - German Folklore [LITR, GP] (3.0 cr)
GER 3642 - The Grimm's Fairy Tales, Then & Now (3.0 cr)
GER 3655 - Cultures of Control and Surveillance in Germany and the US [HIS, CIV] (3.0 cr)
GER 3701 - History of the German Language (3.0 cr)
GER 3702 - Beginning Middle High German (3.0 cr)
GER 3704 - German Dialects (3.0 cr)
GER 5011 - Advanced Conversation and Composition (3.0 cr)
GER 5410 - Topics in German Literature (3.0 cr)
GER 5510 - Topics in Contemporary German Culture (3.0 cr)
GER 5610 - German Literature in Translation (3.0 cr)
GER 5630 - Topics in German Cinema (3.0 cr)
GER 5711 - History of the German Language I (3.0 cr)
GER 5712 - History of the German Language II (3.0 cr)
GER 5721 - Introduction to Middle High German (3.0 cr)
GER 5722 - Middle High German: Advanced Readings (3.0 cr)
GER 5734 - Old Saxon (3.0 cr)
GER 5740 - Topics in Germanic Medieval Studies (3.0 cr)
GER 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)
GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
GER 3721 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)

**Directed Study**

Take 0 - 1 course(s) from the following:

- GER 3993 - Directed Studies (1.0 - 4.0 cr)
- GER 5993 - Directed Studies (1.0 - 4.0 cr)
Twin Cities Campus

German, Scandinavian, Dutch B.A.
German, Nordic, Slavic & Dutch
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 33 to 54
- Degree: Bachelor of Arts

The Department of German, Scandinavian, and Dutch offers a major, several minors, and a broad range of courses in the languages, literatures, intellectual history, media, cultures of Germany, the Scandinavian countries, Finland, Austria, Switzerland, and the Netherlands.

The German, Scandinavian, Dutch (GSD) major gives students the flexibility either to combine coursework in any of the languages and literatures of the department or to designate an emphasis in German or in Scandinavian and Finnish. Many of our students also have majors in such fields as business, computer science, biology, English, history, linguistics, or political science, or have interdisciplinary concentrations like global, media, and sustainability studies. In the GSD major, students develop advanced language competency, come to understand changing cultural and social contexts in relation to various forms of media (from oral and manuscript traditions to book culture, film, and hypermedia), and deepen their interdisciplinary understanding of other cultures. A major in GSD is ideally suited for students wishing to work in public, private, and non-profit organization fields, especially in areas where multilingual and transcultural knowledge is essential. The department recommends study abroad in the target language for at least six months to strengthen cultural familiarity and language fluency. Students may apply appropriate study abroad coursework to the major or minors. Minors are available in Dutch, German, Finnish, Norwegian, Swedish, and Austrian & Central European Studies.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning and Intermediate Language Courses
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.

Dutch
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- DTC 1001 - Beginning Dutch (5.0 cr)
- DTC 1002 - Beginning Dutch (5.0 cr)
- DTC 1003 - Intermediate Dutch (5.0 cr)
- DTC 1004 - Intermediate Dutch (5.0 cr)

or Finnish
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- FIN 1001 - Beginning Finnish I (5.0 cr)
- FIN 1002 - Beginning Finnish II (5.0 cr)
- FIN 1003 - Intermediate Finnish I (5.0 cr)
- FIN 1004 - Intermediate Finnish II (5.0 cr)

or German
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- GER 1002 - Beginning German (5.0 cr)
- GER 1001 - Beginning German (5.0 cr)
  or GER 1022 - Beginning German Review (5.0 cr)
- GER 1003 - Intermediate German (5.0 cr)
- GER 1004 - Intermediate German (5.0 cr)

or Norwegian
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- NOR 1001 - Beginning Norwegian (5.0 cr)
- NOR 1002 - Beginning Norwegian (5.0 cr)
- NOR 1003 - Intermediate Norwegian (5.0 cr)
• NOR 1004 - Intermediate Norwegian (5.0 cr)
or Swedish
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• SWED 1001 - Beginning Swedish (5.0 cr)
• SWED 1002 - Beginning Swedish (5.0 cr)
• SWED 1003 - Intermediate Swedish (5.0 cr)
• SWED 1004 - Intermediate Swedish (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete 4 semester(s) of Dutch, or Finnish, or German, or Norwegian, or Swedish. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the German, Scandinavian, Dutch BA is GER.

Students may combine coursework across the department's designators, or to concentrate on one area by declaring an emphasis (either German or Scandinavian & Finnish). In order to add a German or Scandinavian & Finnish emphasis to your transcript, courses in the competencies, and 3 of 5 electives must be in the appropriate designator(s). Students who take courses taught in English will integrate work in the language of emphasis, as directed by the course instructor or the director of undergraduate studies.

Up to one directed study (GER 3993/5993, SCAN 3933/5933) may be used in place of any one course in the program, with approval from the DUS.

A given course may only count towards one major requirement.

At least 17 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
• GSD 3512W - Imagined Communities: German and European, Culture and Controversies, 1700 to Present [WI] (3.0 cr)

Advanced Language
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• DTCH 3011W - Conversation and Composition [WI] (3.0 cr)
• FIN 3011 - Advanced Finnish (3.0 cr)
• GER 3011W - Conversation and Composition [WI] (4.0 cr)
• SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)

Language & Textual Analysis
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• DTCH 3011W - Conversation and Composition [WI] (3.0 cr)
• DTCH 3012 - Conversation and Composition (3.0 cr)
• FIN 3011 - Advanced Finnish (3.0 cr)
• FIN 3012 - Advanced Finnish (3.0 cr)
• GER 3011W - Conversation and Composition [WI] (4.0 cr)
• GER 3012W - Conversation and Composition [WI] (3.0 cr)
• GER 3014 - German Media (3.0 cr)
• GER 3021 - Business German (3.0 cr)
• GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
• GER 3421 - 18th-Century German Literature (3.0 cr)
• GER 3431 - 19th-Century Literature (3.0 cr)
• GER 3441 - 20th-/21st-Century Literature (3.0 cr)
- GER 3701 - History of the German Language (3.0 cr)
- GER 3702 - Beginning Middle High German (3.0 cr)
- GER 3704 - German Dialects (3.0 cr)
- GER 5711 - History of the German Language I (3.0 cr)
- GER 5712 - History of the German Language II (3.0 cr)
- GER 5721 - Introduction to Middle High German (3.0 cr)
- GER 5722 - Middle High German: Advanced Readings (3.0 cr)
- GER 5734 - Old Saxon (3.0 cr)
- GER 5740 - Topics in Germanic Medieval Studies (3.0 cr)
- SCAN 3505 - Scandinavian Fiction From 1890 to Present [LITR] (3.0 cr)
- SCAN 3601 - Great Literary Works of Scandinavia [LITR] (3.0 cr)
- SCAN 3602 - The Literary Fairy Tale in Scandinavia [LITR] (3.0 cr)
- SCAN 3613 - Children's Literature in Scandinavia [LITR] (3.0 cr)
- SCAN 5701 - Old Norse Language and Literature (3.0 cr)
- SCAN 5703 - Old Norse Poetry (3.0 cr)
- SCAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
  or SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
- GER 3501 - Contemporary Germany (3.0 cr)
- GER 3551 - Sustainability in Germany: Recreation, Education, Innovation [GP] (3.0 cr)
- GER 3601 - German Medieval Literature [LITR, GP] (3.0 cr)
- GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
- GER 3641 - German Folklore [LITR, GP] (3.0 cr)
- GER 3555 - Cultures of Control and Surveillance in Germany and the US [HIS, CIV] (3.0 cr)
- SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
- SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)
- SCAN 3503 - Scandinavian Folklore [LITR, GP] (3.0 cr)
- SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
- GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
  or JWST 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
- GER 3651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
  or GER 5651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
- SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
  or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
- SCAN 3617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
  or SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
- SCAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
  or SCAN 5634 - Scandinavian Women Writers [GP, LITR] (3.0 cr)
- DTCH 3011W - Conversation and Composition [WI] (3.0 cr)
- DTCH 3012 - Conversation and Composition (3.0 cr)
- DTCH 3610 - Dutch Literature in Translation (3.0 cr)
- FIN 3011 - Advanced Finnish (3.0 cr)
- FIN 3012 - Advanced Finnish (3.0 cr)
- GER 3011W - Conversation and Composition [WI] (4.0 cr)
- GER 3012W - Conversation and Composition [WI] (3.0 cr)
- GER 3014 - German Media (3.0 cr)
- GER 3021 - Business German (3.0 cr)
- GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
- GER 3421 - 18th-Century German Literature (3.0 cr)
- GER 3431 - 19th-Century Literature (3.0 cr)
- GER 3441 - 20th-/21st-Century Literature (3.0 cr)
- GER 3501 - Contemporary Germany (3.0 cr)
- GER 3510 - Topics in German Studies (3.0 cr)
- GER 3520 - Topics in Austrian and Central European Culture (3.0 cr)
- GER 3551 - Sustainability in Germany: Recreation, Education, Innovation [GP] (3.0 cr)
- GER 3601 - German Medieval Literature [LITR, GP] (3.0 cr)
- GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
GER 3641 - German Folklore [LITR, GP] (3.0 cr)
GER 3642 - The Grimms' Fairy Tales, Then & Now (3.0 cr)
GER 3655 - Cultures of Control and Surveillance in Germany and the US [HIS, CIV] (3.0 cr)
GER 3701 - History of the German Language (3.0 cr)
GER 3702 - Beginning Middle High German (3.0 cr)
GER 3704 - German Dialects (3.0 cr)
GER 5011 - Advanced Conversation and Composition (3.0 cr)
GER 5410 - Topics in German Literature (3.0 cr)
GER 5510 - Topics in Contemporary German Culture (3.0 cr)
GER 5610 - German Literature in Translation (3.0 cr)
GER 5630 - Topics in German Cinema (3.0 cr)
GER 5711 - History of the German Language I (3.0 cr)
GER 5712 - History of the German Language II (3.0 cr)
GER 5721 - Introduction to Middle High German (3.0 cr)
GER 5722 - Middle High German: Advanced Readings (3.0 cr)
GER 5740 - Topics in Germanic Medieval Studies (3.0 cr)
GER 5733 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
GER 5741 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
GER 5734 - Old Saxon (3.0 cr)
GER 5740 - Topics in Germanic Medieval Studies (3.0 cr)
SCAN 3603 - Scandinavian Folklore [LITR, GP] (3.0 cr)
SCAN 3604 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
SCAN 3605 - Scandinavian Fiction from 1890 to Present [LITR] (3.0 cr)
SCAN 3606 - Great Literary Works of Scandinavia [LITR] (3.0 cr)
SCAN 3607 - The Literary Fairy Tale in Scandinavia [LITR] (3.0 cr)
SCAN 3608 - Living Pictures: An Introduction to Nordic Cinema [AH, WI] (3.0 cr)
SCAN 3613 - Children's Literature in Scandinavia [LITR] (3.0 cr)
SCAN 3670 - Topics in Scandinavian Studies (3.0 cr)
SCAN 4011 - Readings in Scandinavian Languages [WI] (4.0 cr)
SCAN 5502 - The Icelandic Saga (3.0 cr)
SCAN 5630 - Topics in Scandinavian Studies (3.0 cr)
SCAN 5701 - Old Norse Language and Literature (3.0 cr)
SCAN 5703 - Old Norse Poetry (3.0 cr)
GER 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)
or CSCL 3123 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)
or JWST 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)
GER 5733 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
or JWST 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
GER 3651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
or GER 5651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
SCAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
or SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
SCAN 3617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
or SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
SCAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
or SCAN 5634 - Scandinavian Women Writers [GP, LITR] (3.0 cr)

Directed Study
Up to one directed study course may be used in place of any one course in the program, with approval from the department's director of undergraduate studies.

Take 0 - 1 course(s) from the following:
• DTCH 3993 - Directed Studies (1.0 - 5.0 cr)
• DTCH 5993 - Directed Studies (1.0 - 4.0 cr)
• GER 3993 - Directed Studies (1.0 - 4.0 cr)
• GER 5993 - Directed Studies (1.0 - 4.0 cr)
• SCAN 3993 - Directed Studies (1.0 - 4.0 cr)
• SCAN 5993 - Directed Studies (1.0 - 4.0 cr)

Capstone
For the capstone, students write a substantial paper that relies on primary or secondary resources in German, Dutch, a Scandinavian language, or Finnish. Students who double major and choose to complete the capstone requirement in their other major may waive the German, Scandinavian and Dutch BA capstone, but they do need to replace the 3 credits with another DUS-approved upper division elective that includes substantial writing. Talk to the DUS for more information.

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
Capstone Seminar
The Capstone Seminar is taught by a faculty member who supervises the students writing their capstone papers on a topic that each student chooses. The seminar focuses on critical literacy and the use of writing as an analytical tool.

- GSD 3451W - Major Project Seminar [WI] (3.0 cr)
- or GSD 3451V - Honors Major Project Seminar [WI] (3.0 cr)

GER/SCAN 5xxx-level course
Students who choose to complete a German emphasis or Scandinavian & Finnish emphasis should complete their senior capstone course under the corresponding designator. GER 5011 may not count as the capstone.

- GER 5xxx
- or SCAN 5xxx

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- DTCH 3011W - Conversation and Composition [WI] (3.0 cr)
- GER 3011W - Conversation and Composition [WI] (4.0 cr)
- GER 3012W - Conversation and Composition [WI] (3.0 cr)
- GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
- GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
- GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
- GSD 3512W - Imagined Communities: German and European Culture and Controversies, 1700 to Present [WI] (3.0 cr)
- SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)
- SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
- SCAN 3604W - Living Pictures: An Introduction to Nordic Cinema [AH, WI] (3.0 cr)
- GSD 3451W - Major Project Seminar [WI] (3.0 cr)
- or GSD 3451V - Honors Major Project Seminar [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

German
Students who choose to complete the German emphasis must fulfill all three competencies (Advanced Language; Language & Textual Analysis; Critical Literacy & Global Understanding) with GER courses. Additionally, at least 3 of the 5 required electives must also be GER. If a 5xxx course is chosen as the senior capstone, it must be a GER 5xxx. The major program must be approved by the director of undergraduate studies.

Scandinavian & Finnish
Students who choose to complete the Scandinavian & Finnish emphasis must fulfill all three competencies (Advanced Language; Language & Textual Analysis; Critical Literacy & Global Understanding) with SCAN or FIN 3xxx or SCAN 5xxx courses. Additionally, at least 3 of the 5 required electives must also be SCAN or FIN 3xxx, or SCAN 5xxx. If a 5xxx course is chosen as the senior capstone, it must be a SCAN 5xxx course. The major program must be approved by the director of undergraduate studies.
Twin Cities Campus
Global Studies B.A.
Global Studies Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 36
- Degree: Bachelor of Arts

This program offers students the opportunity to study the interrelated processes shaping today's increasingly interdependent world. Students examine political, economic, cultural, and social processes of local communities, nation states, transnational businesses, and social movements around the globe. The program requires students to integrate theoretical knowledge about broad global processes with regionally focused detailed knowledge of social and cultural systems and language. Students complete a common set of core courses providing a broad overview of issues and approaches to global studies. Each student then chooses a thematic and regional concentration. Coursework is completed by selecting from relevant courses offered by a broad range of departments.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Global Studies BA is GLOS.

Students must formally enroll in the major at the advising office, 206 Social Sciences Building. Students must meet with an advisor to develop a program that meets major guidelines. Students must complete two sub-plans: one thematic and one regional concentration.

At least 14 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. Of the courses counting towards the BA, students must take at least 5 upper-division GLOS courses or courses cross-listed with GLOS.

A given course may only count towards one major requirement.

Students may earn a BA or a minor in global studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
  or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
- GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)

Ways of Knowing
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• ANTH 3003 - Cultural Anthropology (3.0 cr)
• ANTH 4025 - Studies in Ethnographic Classics (3.0 cr)
• CI 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)
• COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• ECON 3101 - Intermediate Microeconomics (4.0 cr)
• ECON 3102 - Intermediate Macroeconomics (4.0 cr)
• ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
• GEG 4001 - Modes of Geographic Inquiry (4.0 cr)
• GLOS 3105 - Ways of Knowing in Global Studies (3.0 cr)
• PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
• PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• PA 4144 [Inactive] (3.0 cr)
• POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)
• TRIN 3101 - Introduction to Interpreting (3.0 cr)
• POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
or POL 3085H - Honors Course: Quantitative Analysis in Political Science [MATH] (4.0 cr)

Experiential Learning
Students must participate in a relevant experiential learning opportunity through study abroad (at least 6 weeks), an internship (at least 100 hours), or a service-learning experience. Work completed in meeting these requirements may count toward the thematic or regional concentrations. Prior approval by a Global Studies advisor is required.

Capstone
Students must complete a capstone project that integrates their regional and thematic concentrations. Students must be either seniors or second-semester juniors and have completed either GLOS 3144 or GLOS 3145 to register for the capstone experience. Students who double major and choose to complete the capstone requirement in their other major may waive the Global Studies BA capstone, and they do not need to replace the 3 credits.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

Capstone Seminar
In this course, students complete a 25-35 page academic research paper on a topic related to their thematic and/or regional concentrations. The course includes classroom instruction supporting independent research and writing in an interdisciplinary field, and it provides opportunities for one-on-one guidance and intellectual mentorship with faculty.
• GLOS 3981W - Major Project Seminar [WI] (3.0 cr)

• Honors Capstone
Honors students register for GLOS 3550V.
• GLOS 3550V - Honors Course: Supervised Research Paper [WI] (4.0 cr)

• Directed Study
This option is best for students who wish to (1) continue working closely with a specific faculty member on an ongoing research project, (2) propose a creative capstone experience (see Global Studies advisor for more information about this option), or (3) complete a summa cum laude thesis (consult with your honors advisor for more information about GLOS summa requirements).
• GLOS 3993 - Directed Study (1.0 - 5.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• AFRO 3601W - African Literature [LITR, GP, WI] (3.0 cr)
• AMES 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
• AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
• AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• AMES 3441W - Japanese Theater [AH, WI] (3.0 cr)
• AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
• ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3049W - Anthropology of Social Class [WI] (3.0 cr)
• ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
• ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• CI 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)
• CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 3676W - Communicating Terrorism [GP, WI] (3.0 cr)
• COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
• COMM 4404W - Language Borderlands [WI] (3.0 cr)
• CSCL 3130W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
• CSCL 3425W - Theories of Culture [AH, WI] (3.0 cr)
• DANCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
• ECON 4331W - Economic Development [WI] (3.0 cr)
• ECON 4431W - International Trade [GP, WI] (3.0 cr)
• ECON 4432W - International Finance [WI] (3.0 cr)
• ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
• ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
• GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
• GSD 3512W - Imagined Communities: German and European, Culture and Controversies, 1700 to Present [WI] (3.0 cr)
• GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
• HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
• HIST 3691W - The British Empire [WI] (3.0 cr)
• HIST 3704W - Daily Life in Europe: 1300-1800 [HIS, GP, WI] (3.0 cr)
• LING 3101W - Languages of the World [WI] (3.0 cr)
• LING 3101W - General History of Western Philosophy: Ancient Period [AH, WI] (4.0 cr)
• POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
• POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
• POL 3489W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
• POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
• POL 4461W - European Government and Politics [GP, WI] (3.0 cr)
• POL 4473W [inactive] [GP, WI] (3.0 cr)
• POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
• POL 4867W [inactive] [GP, WI] (4.0 cr)
• PORT 3502W - Global Portuguese: 1900-present [WI] (3.0 cr)
• SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)
• SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
• AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
• RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
• AMES 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
• GLOS 3637W [inactive][LITR, GP, WI] (3.0 cr)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• ARTH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARCH 3711W - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GEOG 3374W [inactive][AH, WI] (4.0 cr)
• GLOS 3322W [inactive][CIV, WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• GLOS 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 3981W - Major Project Seminar [WI] (3.0 cr)
or GLOS 3550V - Honors Course: Supervised Research Paper [WI] (4.0 cr)
• HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or LAS 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
• HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
• HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.

Cultural Production and Everyday Practice

What do literature, films, performances, artworks, music, and popular culture tell us about the world, and what do they do in the world to entertain, engage, inform, or deceive? How do new technologies and digital media transform previous forms of collective belonging and political expression? How are our sensibilities, values, and understandings of the world shaped by the global movement of people, material things, and ideas? Students selecting this track will explore these and other questions by integrating humanities and social science perspectives on such phenomena as globalization, transnationalism, modernity, colonialism, religious affiliations, nations and nationalism, gender and sexual identities, and perceptions of environment and place. They will be taught to think creatively and critically about the production and circulation of cultural forms at local, national, regional and transnational scales. This will serve as a basis for understanding not only contemporary forms of power and inequality, but also the aspirations, self-understandings and struggles of human communities in an increasingly interconnected world.

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme. Cultural Production and Everyday Practice is a thematic concentration. It must be paired with a regional concentration of your choice.

Cultural Production and Everyday Practice Anchor Courses

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- GLOS 3143 - Living in the Global [CIV] (3.0 cr)
- GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
- GLOS 3609 - Novels and Nations [LITR, GP] (3.0 cr)
or GWSS 3304 [Inactive] (3.0 cr)

Cultural Production and Everyday Practice Electives

Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- AMES 5261 [Inactive] (3.0 cr)
- AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
- ANTH 3004 - Great Controversies in Anthropology [SOCS, GP] (3.0 cr)
- ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
- ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
- ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
- ANTH 3036 - The Body in Society (3.0 cr)
- ANTH 3049W - Anthropology of Social Glass [WI] (3.0 cr)
- ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
- ANTH 4019 - Symbolic Anthropology (3.0 cr)
- ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
- ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
- ANTH 4071 [Inactive] (3.0 cr)
- ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
- ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
- COMM 3676W - Communicating Terrorism [GP, WI] (3.0 cr)
- COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
- COMM 4235 - Electronic Media and Ethnic Minorities--A World View (3.0 cr)
- COMM 4404W - Language Borderlands [WI] (3.0 cr)
- CSCL 3005 - Seminar in Critical Thought (3.0 cr)
- CSCL 3130W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
- CSCL 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
Political Economy and Environmental Change
What are the contemporary economic, political, ideological, and cultural forces shaping the ever-changing global economy? How do transnational corporations and institutions influence the rules of the game, and with what consequences for inequality within and beyond the borders of the United States? What do we produce and where, how is global finance transforming the way the world works, and what are the dynamics of consumption, distribution, resource use and waste underlying 21st century capitalism? Is this system socially and environmentally sustainable? Students in this track will examine these questions from a "political economy" and "political ecology" perspective. They will also explore how grassroots and transnational social movements are attempting to articulate new visions of sustainable development, nature, climate change, and justice.

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme. Political Economy and Environmental Change is a thematic concentration. It must be paired with a regional concentration of your choice.

Political Economy and Environmental Change Anchor Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- GLOS 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
  - or SOC 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
- GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  - or SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- ANTH 3041 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3071 - Microeconomics of International Development (3.0 cr)
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
Human Rights and Justice

What are human rights? How are they defined, critiqued, enacted, and achieved? This theme allows students to rethink categories such as rights, equality, and justice; to examine the role of law, memory, narrative, and media in representing mass violence; and to examine mechanisms promoting conflict resolution and cooperation in a global context. Courses address how such relations have been altered by the increasing role of non-governmental organizations, supranational organizations, and institutions of global governance. Global studies majors completing this track are encouraged to think about the ways in which governance, peace, and justice are influenced by both local and global social, political, and cultural processes.

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

Human Rights and Justice is a thematic concentration. It must be paired with a regional concentration of your choice.

- ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4337 - Comparative Economic Systems (3.0 cr)
- ECON 4401 - International Economics [GP] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4432W - International Finance [WI] (3.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
- ESPM 3102 (Inactive) (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
- ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
- GEOG 5385 - Globalization and Development: Political Economy (4.0 cr)
- HIST 3283 - Marx, Capital, and History: An Introduction to Marxist Theory and History (3.0 cr)
- HIST 3341 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
- PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3489W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
- POL 3833 - The United States and the Global Economy (3.0 cr)
- POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
- PUBH 3107 - Global Public Health and the Environment (2.0 cr)
- SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GLOS 3215 - Globalization and Development: Political Economy (3.0 cr)
- GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
- HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
- GEOG 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GWSS 3205 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
- ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
- SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
- GLOS 4305 (Inactive) [ENV] (3.0 cr)
- SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
Human Rights and Justice Anchor Courses
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- GLOS 3412 - What is Equality? [CIV] (3.0 cr)
  or GLOS 5412 - What is Equality? [CIV] (3.0 cr)
- GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or GLOS 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or SOC 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)

Human Rights and Justice Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
- COMM 3681W - Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI] (4.0 cr)
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- GLOS 3896 - Global Studies Internship (3.0 cr)
- GLOS 5403 - Human Rights Advocacy (3.0 cr)
- GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
- GWSS 4001 - Nations, Empires, Feminisms (3.0 cr)
- GWSS 4103 - Transnational Feminist Theory [GP] (3.0 cr)
- HIST 3362 - Global History of World War II [HIS] (3.0 cr)
- PHIL 3307 (Inactive) [AH, CIV] (4.0 cr)
- POL 3295W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
- POL 3799 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 3765 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
- POL 3805 - International Relations [SOCS, GP] (3.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
- POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
- POL 4410 - Topics in Comparative Politics (3.0 cr)
- POL 4487 - The Struggle for Democratization and Citizenship (3.0 cr)
- POL 4771 - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
- POL 4855W - International Conflict and Security [GP, WI] (3.0 cr)
- SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
- SW 3703 - Gender Violence in Global Perspective (3.0 cr)
- AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
  or HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
  or POL 4507 (Inactive) (3.0 cr)
- GLOS 3412 - What is Equality? [CIV] (3.0 cr)
  or GLOS 5412 - What is Equality? [CIV] (3.0 cr)
- GLBT 3404 - Transnational Sexualities [GP] (3.0 cr)
  or GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
- GLOS 3322W (Inactive) [CIV, WI] (3.0 cr)
  or SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- GLOS 4104 - Crime and Human Rights (3.0 cr)
  or GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
  or SOC 4104 - Crime and Human Rights (3.0 cr)
  or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
- GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or GLOS 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or SOC 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- GLOS 4406 (Inactive) [GP] (3.0 cr)
  or SOC 4171 - Sociology of International Law: Human Rights & Trafficking [GP] (3.0 cr)
- SOC 4101W - Sociology of Law [WI] (3.0 cr)
  or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
- SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
  or SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
  or SOC 5411 - Terrorist Networks & Counterterror Organizations (3.0 cr)

Global Health and Mobile Populations
Global pandemics, impacts of climate change, unprecedented movements of people and pathogens, civil unrest and displaced populations: it is difficult to avoid hearing about the seeming conflagration of forces and factors today that are causing widespread fear,
questioning the integrity of national borders, the effectiveness of global governing agencies, the progress of science, and our collective capacity for economic and environmental change. Through the courses offered in this track, students should get a good sense of the imprint of history and of current geopolitical and economic policies conditioning patterns of disease and mobility, be able to critically analyze received understandings and representations of migrations and disease outbreaks, and the many factors shaping responses to these phenomena.

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme. Global Health and Mobile Populations is a thematic concentration. It must be paired with a regional concentration of your choice.

**Global Health and Mobile Populations Anchor Courses**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
- GLOWS 3205 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
- GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)
- GSOC 3505 - Migrations: People in Motion [GP] (3.0 cr)

**Global Health and Mobile Populations Electives**
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
- ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
- CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- DANCE 3467W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
- HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
- PA 3481 - Cedar Riverside: Where The World Meets MN (2.0 cr)
- PUBH 3107 - Global Public Health and the Environment (2.0 cr)
- PUBH 3601 - Maternal and Child Health Global Public Health Issues (2.0 cr)
- AAS 3483 - Hmong History Across the Globe (3.0 cr)
- HIST 3483 - Hmong History Across the Globe (3.0 cr)
- AAS 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
- HIST 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
- AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
- GWSS 3205 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
- GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)
- HSCI 3611 - Enlightenment, Revolution, and the Rise of Modern Science [HIS, GP] (3.0 cr)
- HSCI 5611 - Enlightenment, Revolution, and the Rise of Modern Science (3.0 cr)
- SOC 3511 - World Population Problems [GP] (3.0 cr)
- SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)

**Africa**
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme. Africa is a regional concentration. It must be paired with a thematic concentration of your choice.

**Breadth Courses**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
- HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
- AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
- APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
- POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)

**Elective Courses**
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- AFRO 3002 - West African History: 1800 to Present [GP] (3.0 cr)
or HIST 3455 - West African History: 1800 to Present [GP] (3.0 cr)
• AFRO 3006 - Impact of African Migrations in the Atlantic World (3.0 cr)
• AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
or HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
or HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
or HIST 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
or APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
• AFRO 3434 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
or HIST 3435 - History of South Africa from 1910 (3.0 cr)
or HIST 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
or ANTH 3020 - Cultural Anthropology [LITR, WI] (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
or HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 5513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
• EAS 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or EAS 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or EAS 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or GEOG 3211 - East Asia (3.0 cr)
or GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 5478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• AMES 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
or AMES 3333 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)
or AMES 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
or AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
or AMES 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
or AMES 3371 - [Inactive] (3.0 - 4.0 cr)
or EAS 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or AMES 3372 - History of Women and Family in China, 1600-2000 (3.0 cr)
or HIST 3469 - History of Women and Family in China, 1600-2000 (3.0 cr)
or AMES 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or AMES 3456 - Japanese Film [GP] (3.0 cr)
or EAS 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
Europe

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

Europe is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- ANTH 4344 [Inactive](3.0 cr)
- GLOS 4344 [Inactive](3.0 cr)
- GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
- GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
- GLOS 3422 [Inactive](3.0 cr)
- HIST 3721 - Studies in 20th-Century Europe From the Turn of the Century to the End of World War II: 1900-45 (3.0 cr)
- HIST 3724 [Inactive](3.0 cr)
- POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- POL 4461W - European Government and Politics [GP, WI] (3.0 cr)

Elective Courses

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- ARTH 3309 - Renaissance Art in Europe [AH] (3.0 cr)
- ARTH 3312 - European Art of the Eighteenth Century: Rococo to Revolution [HIS] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
- ENGL 3003W - Historical Survey of British Literatures I [HIS, WI] (4.0 cr)
- ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
- ENGL 3151 - Romantic Literatures and Cultures (3.0 cr)
- ENGL 3180 [Inactive](3.0 cr)
- ENGL 4152 - Nineteenth Century British Novel (3.0 cr)
- FREN 3130 - Literature of Revolution and Upheaval (3.0 cr)
- GER 3014 - German Media (3.0 cr)
- GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
- GER 3421 - 18th-Century German Literature (3.0 cr)
- GER 3431 - 19th-Century Literature (3.0 cr)
- GER 3501 - Contemporary Germany (3.0 cr)
• GER 3601 - German Medieval Literature [LITR, GP] (3.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GER 3641 - German Folklore [LITR, GP] (3.0 cr)
• GER 3701 - History of the German Language (3.0 cr)
• GRK 3004 - Intermediate Greek Poetry (4.0 cr)
• GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
• GSD 3512W - Imagined Communities: German and European, Culture and Controversies, 1700 to Present [WI] (3.0 cr)
• HIST 3052 - Ancient Civilization: Greece (3.0 cr)
• HIST 3152 - British History From the Seventeenth Century [HIS, GP] (3.0 cr)
• HIST 3244 - History of Eastern Europe [HIS, GP] (3.0 cr)
• HIST 3283 - Marx, Capital, and History: An Introduction to Marxist Theory and History (3.0 cr)
• HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
• HIST 3624 [Inactive] (3.0 cr)
• HIST 3652 - Early Modern Britain (3.0 cr)
• HIST 3681 - Irish History (3.0 cr)
• HIST 3691W - The British Empire [WI] (3.0 cr)
• HIST 3704W - Daily Life in Europe: 1300-1800 [HIS, GP, WI] (3.0 cr)
• HIST 3721 - Studies in 20th-Century Europe From the Turn of the Century to the End of World War II: 1900-45 (3.0 cr)
• HIST 3724 [Inactive] (3.0 cr)
• HIST 3746 - Game of Thrones: Emperors, Knights and Witches in Central Europe [HIS] (3.0 cr)
• ITAL 3550 [Inactive] (3.0 cr)
• JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
• PHIL 3001W - General History of Western Philosophy: Ancient Period [AH, WI] (4.0 cr)
• PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
• POL 3451W - Ideas and Protest in French Postwar Thought [AH, CIV] (3.0 cr)
• POL 3451W - Ideas and Protest in French Postwar Thought [AH, CIV] (3.0 cr)
• POL 4461W - European Government and Politics [GP, WI] (3.0 cr)
• SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)
• SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
• SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)
• SCAN 3503 - Scandinavian Folklore [LITR, GP] (3.0 cr)
• SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
• SCAN 3601 - Great Literary Works of Scandinavia [LITR] (3.0 cr)
• SCAN 3602 - The Literary Fairy Tale in Scandinavia [LITR] (3.0 cr)
• SCAN 3613 - Children's Literature in Scandinavia [LITR] (3.0 cr)
• SCAN 3900W - Pre-modern Spanish Culture and Thought [HIS] (3.0 cr)
• SPAN 3910 - Topics in Spanish Peninsular Literature (3.0 cr)
• ANTH 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
• MEST 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
• ANTH 4344 [Inactive] (3.0 cr)
• GLOS 4344 [Inactive] (3.0 cr)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
• MEST 3009 - Medieval Art [AH] (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
• HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
• ENGL 3007 - Shakespeare [LITR] (3.0 cr)
• ENGL 3007H - Honors: Shakespeare [LITR] (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
• ENGL 3161H [Inactive] (3.0 cr)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GLBT 3211 - History of Sexuality in Europe (3.0 cr)
• HIST 3211 - History of Sexuality in Europe (3.0 cr)
• GLOS 3422 [Inactive] (3.0 cr)
• HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
• HIST 3727 - History of the Holocaust (3.0 cr)
• JWST 3520 - History of the Holocaust (3.0 cr)
• RELS 3520 - History of the Holocaust (3.0 cr)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
• JWST 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
Islamic World

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

Islamic World is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- AMES 3871 - Islam: Religion and Culture (3.0 cr)
- HIST 3493 - Islam: Religion and Culture (3.0 cr)
- RELS 3712 - Islam: Religion and Culture (3.0 cr)
- GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
- GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
- RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
- GLOS 3643 - Islam and the West (3.0 cr)
- HIST 3546 - Islam and the West (3.0 cr)
- RELS 3714 - Islam and the West (3.0 cr)
- GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
- RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
- SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)

Elective Courses

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- AMES 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
- AMES 5866 - Gender and Sexuality in Modern Arabic Literature (3.0 cr)
- ARTH 3940 - Topics in Art History (1.0 - 4.0 cr)
- FREN 3451 - North African Cinema (3.0 cr)
- HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
- HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
- HIST 3507 - History of Modern Egypt (3.0 cr)
- HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
- POL 3475 (Inactive) (3.0 cr)
- POL 4477 (Inactive) (4.0 cr)
Latin America

Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

Latin America is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- ECON 4311 - Economy of Latin America (3.0 cr)
- HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
- HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
- SPAN 3221 - Interpreting Colonial Latin America: Empire and Early Modernity (3.0 cr)
- SPAN 3222 - Interpreting Modern and Contemporary Latin America (3.0 cr)
- SPAN 3512 - Modern Latin America (3.0 cr)
- SPAN 3606 - Human Rights Issues in the Americas (3.0 cr)
- POL 3479 - Latin American Politics [GP] (3.0 cr)
• POL 4492 - Law and (In)Justice in Latin America (3.0 cr)
or POL 5492 - Law and (In)Justice in Latin America (3.0 cr)

Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• CHIC 3275 - Engaged Learning in the Chicano/Latino Community [CIV] (3.0 cr)
• CHIC 3352 - Transborder Theory: Global Views/Borderland Spaces (3.0 cr)
• CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
• CHIC 3375 - Folklore of Greater Mexico [DSJ] (3.0 cr)
• ECON 4311 - Economy of Latin America (3.0 cr)
• POL 3479 - Latin American Politics [GP] (3.0 cr)
• POL 4463 - The Cuban Revolution Through the Words of Cuban Revolutionaries [GP] (3.0 cr)
• PORT 3502W - Global Portuguese: 1900-present [WI] (3.0 cr)
• SPAN 3221 - Interpreting Colonial Latin America: Empire and Early Modernity (3.0 cr)
• SPAN 3222 - Interpreting Modern and Contemporary Latin America (3.0 cr)
• SPAN 3401 - Latin Immigration and Community Engagement [CIV] (3.0 cr)
• SPAN 3512 - Modern Latin America (3.0 cr)
• SPAN 3606 - Human Rights Issues in the Americas (3.0 cr)
• HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or LAS 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
• CHIC 3423 - Central American Revolutions (3.0 cr)
or HIST 3423 - Central American Revolutions (3.0 cr)
• CHIC 3425 - History of Modern Mexico (3.0 cr)
or HIST 3425 - History of Modern Mexico (3.0 cr)
• CHIC 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
or GLOS 3634 [Inactive] [HIS, DSJ] (3.0 cr)
or HIST 3444 - Chicana and Chicano History I [HIS, DSJ] (3.0 cr)
or POL 3475 - Approaches to the Study of the Middle East (3.0 cr)
or POL 4477 [Inactive] (4.0 cr)
or ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)

Middle East
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

Middle East is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
• HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
• POL 4477 [Inactive] (4.0 cr)
• ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)

Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• AMES 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
• AMES 5866 - Gender and Sexuality in Modern Arabic Literature (3.0 cr)
• ARTH 3940 - Topics in Art History (1.0 - 4.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
• HIST 3506 - Survey of the Modern Middle East [GP] (3.0 cr)
• HIST 3507 - History of Modern Egypt (3.0 cr)
• HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
• POL 3475 [Inactive] (3.0 cr)
• POL 4477 [Inactive] (4.0 cr)
• POL 4867W [Inactive] [GP, WI] (4.0 cr)
• AMES 3871 - Islam: Religion and Culture (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
• AMES 3872 - The Cultures of the Silk Road (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or RELS 3722 - The Ottoman Empire [HIS, GP] (3.0 cr)
• ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
• GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3643 - Islam and the West (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3942 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3503 (inactive)(3.0 cr)
or RELS 3709 (inactive)(3.0 cr)
or HIST 3506 (inactive)(3.0 cr)
or RELS 3713 (inactive)(3.0 cr)
or HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 5513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
or RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
or JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

Russia
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

Russia is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• HIST 3637 - Modern Russia: From Peter the Great to the Present (3.0 cr)
• POL 4474W - Russian Politics: From Soviet Empire to Post-Soviet State [WI] (3.0 cr)
• HIST 3264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
or HIST 5264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
- HIST 3265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
- or HIST 5265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)

Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- HIST 3637 - Modern Russia: From Peter the Great to the Present (3.0 cr)
- POL 4474W - Russian Politics: From Soviet Empire to Post-Soviet State [WI] (3.0 cr)
- RUSS 3105 - Russian Poetry and Prose (3.0 cr)
- RUSS 3512 - Russian Art and Culture [AH, GP] (3.0 cr)
- HIST 3264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
- or HIST 5264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
- HIST 3265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
- or HIST 5265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
- HIST 3767 - Eastern Orthodoxy: History and Culture (3.0 cr)
- or RELS 3611 - Eastern Orthodoxy: History and Culture (3.0 cr)
- RUSS 3404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- or RUSS 5404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- RUSS 3411 - Dostoevsky in Translation [LITR, GP] (3.0 cr)
- or RUSS 5411 - Dostoevsky in Translation [LITR, GP] (3.0 cr)
- RUSS 3421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- or RUSS 5421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- RUSS 3422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
- or RUSS 5422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)

South Asia
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

South Asia is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- AMES 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
- or GLOS 3637W [inactive] [LITR, GP, WI] (3.0 cr)
- AMES 3676 [inactive] [GP, SOCS] (3.0 cr)
- or ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
- or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
- or GLOS 3969 - 20th Century India (3.0 cr)
- or HIST 3489 - 20th Century India (3.0 cr)

Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- AMES 3651 - Ghosts of India [GP] (3.0 cr)
- AMES 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- POL 3431 - Politics of India [GP] (3.0 cr)
- AMES 3014W - Art of India [AH, GP, WI] (4.0 cr)
- or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
- or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
- AMES 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
- or GLOS 3637W [inactive] [LITR, GP, WI] (3.0 cr)
- AMES 3676 [inactive] [GP, SOCS] (3.0 cr)
- or ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
- or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
- or GLOS 3969 - 20th Century India (3.0 cr)
- or HIST 3489 - 20th Century India (3.0 cr)

Individualized Region
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Students may choose to design their own individualized regional concentration. All courses must be chosen in consultation with the Global Studies advisor.

Individualized Region is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s). All courses must be chosen in consultation with the Global Studies advisor.

**Elective Courses**
Take 3 or more course(s) totaling 9 or more credit(s). All courses must be chosen in consultation with the Global Studies advisor.
Twin Cities Campus
Global Studies Minor
Global Studies Department
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15

The minor offers students the opportunity to study the interrelated processes shaping today’s increasingly interdependent world. Students examine political, economic, cultural, and social processes of local communities, nation states, transnational businesses, and social movements around the globe. The program requires students to integrate theoretical knowledge about broad global processes with regionally focused detailed knowledge of social and cultural systems and language. Students complete a common set of core courses providing a broad overview of issues and approaches to global studies. Each student then chooses a thematic and regional concentration. Coursework is completed by selecting from relevant courses offered by a broad range of departments.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students declare a thematic and regional concentration with the Global Studies advisor.

Students may earn a BA or a minor in global studies, but not both.

Core Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
  or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)

Thematic Anchor Courses
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

Cultural Production and Everyday Practice
Take 0 - 1 course(s) from the following:
• GLOS 3143 - Living in the Global [CIV] (3.0 cr)
• GLOS 3602 - In Other Worlds: Globalization and Culture (3.0 cr)
• GLOS 3609 - Novels and Nations [LITR, GP] (3.0 cr)

Political Economy and Environmental Change
Take 0 - 1 course(s) from the following:
• GLOS 3707 - Disposable People?: Surplus Value, Surplus Humanity (3.0 cr)
  or SOC 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
• GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  or SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)

Human Rights and Justice
Take 0 - 1 course(s) from the following:
• GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
• GLOS 3412 - What is Equality? [CIV] (3.0 cr)
  or GLOS 5412 - What is Equality? [CIV] (3.0 cr)
• GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or GLOS 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or SOC 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)

• Global Health and Mobile Populations
Take 0 - 1 course(s) from the following:
• GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or GWSS 3205 - Life for Sale: Global Debates on Environment, Science and Society (3.0 cr)
• GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)
or SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)

Regional Breadth Requirement
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:

Africa
Take 0 - 1 course(s) from the following:
• AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
or HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
or APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
• AFRO 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
or POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)

East Asia
Take 0 - 1 course(s) from the following:
• GEOG 3211 - East Asia (3.0 cr)
or EAS 3461 - Introduction to East Asia: The Imperial Age (3.0 - 4.0 cr)
or HIST 3461 - Introduction to East Asia: The Imperial Age (3.0 - 4.0 cr)
• EAS 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or EAS 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 5478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)

Europe
Take 0 - 1 course(s) from the following:
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
or HIST 3721 - Studies in 20th-Century Europe From the Turn of the Century to the End of World War II: 1900-45 (3.0 cr)
or HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
or POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
or POL 4461W - European Government and Politics [GP, WI] (3.0 cr)
or POL 5461 - European Government and Politics (4.0 cr)

Islamic World
Take 0 - 1 course(s) from the following:
• AMES 3871 - Islam: Religion and Culture (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
or GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
or RELS 3715 - Islam and the West (3.0 cr)

Latin America
Take 0 - 1 course(s) from the following:
• ECON 4311 - Economy of Latin America (3.0 cr)
or POL 3479 - Latin American Politics [GP] (3.0 cr)
or SPAN 3221 - Interpreting Colonial Latin America: Empire and Early Modernity (3.0 cr)
or SPAN 3222 - Interpreting Modern and Contemporary Latin America (3.0 cr)
or SPAN 3512 - Modern Latin America (3.0 cr)
or HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or HIST 3401V - Honors Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or LAS 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or LAS 3401V - Honors Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
• POL 4492 - Law and (In)Justice in Latin America (3.0 cr)
  or POL 5492 - Law and (In)Justice in Latin America (3.0 cr)

• Middle East
  Take 0 - 1 course(s) from the following:
  • HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
  • HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
  • ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
    or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
    or RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
    or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)

• Russia
  Take 0 - 1 course(s) from the following:
  • HIST 3637 - Modern Russia: From Peter the Great to the Present (3.0 cr)
  • POL 4474W - Russian Politics: From Soviet Empire to Post-Soviet State [WI] (3.0 cr)
  • HIST 3264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
    or HIST 5264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
  • HIST 3265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
    or HIST 5265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)

Elective
Students must take one elective course in either the theme or the region of concentration, chosen in consultation with a global studies advisor.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• Thematic/Regional Elective
Twin Cities Campus
Greek Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 17 to 28

The Greek minor allows students who have satisfied the language requirement in Greek to read ancient authors and to expand their knowledge of ancient civilization.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 3 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introductory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- CNES 1002 - World of Greece [HIS] (3.0 cr)
- CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
  or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
• Other intro course may be taken with DUS approval.

First-Year Greek
In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Greek language coordinator.
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- GRK 1001 - Beginning Classical Greek I (5.0 cr)
- GRK 1002 - Beginning Classical Greek II (5.0 cr)

Minor Requirements
Students are required to complete 2 semester(s) of Greek. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

Students may earn a BA or a minor in Greek, but not both.

Intermediate Greek Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- GRK 3003 - Intermediate Greek Prose (4.0 cr)
- GRK 3004 - Intermediate Greek Poetry (4.0 cr)

Greek Elective
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- GRK 5701 - Prose Composition (3.0 cr)
- GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Electives
Courses in history, art history, medieval studies, and other departments may be used with director of undergraduate studies approval.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
• CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3104 (Inactive) (3.0 cr)
• CNES 3105 (Inactive) (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
• GRK 5100 - Advanced Reading (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• GRK 5701 - Prose Composition (3.0 cr)
• HIST 3052 - Ancient Civilization: Greece (3.0 cr)
• CNES 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr) or HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr) or CNES 5071 - Greek and Hellenistic Religions (3.0 cr) or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr) or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr) or CNES 5072 - The Birth of Christianity [AH] (3.0 cr) or RELS 3072 - The Birth of Christianity [AH] (3.0 cr) or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3108 (Inactive) (3.0 cr) or RELS 3541 (inactive) (3.0 cr)
• ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr) or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr) or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr) or CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3204 (inactive) (3.0 cr) or CNES 5204 - The Dead Sea Scrolls (3.0 cr) or JWST 5204 (inactive) (3.0 cr) or RELS 5204 (inactive) (3.0 cr) or RELS 5204 - The Dead Sea Scrolls (3.0 cr)
• CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr) or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr) or HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr) or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr) or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr) or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
Twin Cities Campus
Health Psychology Minor
Psychology
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 21

The undergraduate minor in health psychology comprises an empirical foundation in the discipline along with an emphasis in health psychology as it pertains to psychopathology, stress, and trauma and health-related behaviors.

The health psychology minor courses provide students with knowledge in a vital field within the discipline of psychology. The leading health concerns in our world have substantial behavioral components, making the study of health psychology highly relevant for pre-health science students, health care professionals, and students pursuing human and social services.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)
• completely online (all program coursework can be completed online)

Admission Requirements
Prospective minors are strongly encouraged to complete PSY 3801 (or a Department of Psychology approved equivalent) prior to formally declaring the minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Courses without a PSY designator, or transfer PSY courses may be approved for use in minor requirements with specific approval of Psychology Undergraduate Advising.

At least 9 upper-division psychology credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may not earn a BA or BS in psychology and a health psychology minor. Students may combine the health psychology minor with the BA or the BS in child psychology, but not both.

Note: Declaring the minor does not guarantee admittance into required courses. Students are responsible for securing a seat in required courses.

Required Foundation Courses
Take exactly 3 course(s) from the following:
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
  or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
• PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
  or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
  or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

Upper-Level PSY Courses
Take exactly 3 course(s) from the following:
• PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
• PSY 3206 - Introduction to Health Psychology (3.0 cr)
• PSY 4521 - Psychology of Stress and Trauma (3.0 cr)
Twin Cities Campus
Hebrew Minor
Classical & Near Eastern Studies
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 39

The Hebrew minor permits students who have satisfied the language requirement with Hebrew to use their knowledge to read sources of antiquity, the middle ages, and the modern period and to add to their knowledge of Hebrew civilization and culture.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning Hebrew and Beginning Biblical Hebrew
These courses, or equivalent with DUS/HLC approval, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the Hebrew Language Coordinator for more information.

Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- HEBR 1001 - Beginning Hebrew I (5.0 cr)
- HEBR 1002 - Beginning Hebrew II (5.0 cr)
- HEBR 1101 - Beginning Biblical Hebrew I (5.0 cr)
- HEBR 1102 - Beginning Biblical Hebrew II (5.0 cr)

Related Non-language Introductory Course
Students who chose to take CNES/RELS 1201 to fulfill the introductory course requirement will not be able to take the CNES/JWST/RELS 3201 to fulfill another requirement in the minor. All five courses are equivalent and credit cannot be granted for more than one version of the course.

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- CNES 1082 - Jesus in History [HIS] (3.0 cr)
  or RELS 1082 - Jesus in History [HIS] (3.0 cr)
- CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- Other intro course may be taken with DUS approval.

Minor Requirements
A given course may only count towards one minor requirement.

Upper-Division Hebrew Courses
Take 11 or more credit(s) from the following:
- HEBR 3xxx
- HEBR 5xxx

Electives
Courses taught by visiting professors from Israel may count as an elective. See department for final consent.

Take 3 or more credit(s) from the following:

- HEBR 3xxx
- HEBR 5xxx
- JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
- POL 4867W [Inactive] [GP, WI] (4.0 cr)
- CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  - JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  - RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- CNES 3204 [Inactive] (3.0 cr)
  - CNES 5204 - The Dead Sea Scrolls (3.0 cr)
  - JWST 5204 - The Dead Sea Scrolls (3.0 cr)
  - RELS 3204 [Inactive] (3.0 cr)
- JWST 5204 - The Dead Sea Scrolls (3.0 cr)
- CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
  - JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
  - RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
- CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  - CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  - JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  - RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
- HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
  - JWST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
  - RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
- HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
  - JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
  - RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
- HIST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
  - JWST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
  - RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
- HIST 3727 - History of the Holocaust (3.0 cr)
  - JWST 3520 - History of the Holocaust (3.0 cr)
  - RELS 3520 - History of the Holocaust (3.0 cr)
- JWST 4878W [Inactive] [GP, WI] (4.0 cr)
  - POL 4878W [Inactive] [GP, WI] (3.0 cr)
- CNES 5513W [Inactive] [WI] (3.0 cr)
  - JWST 5513W [Inactive] [WI] (3.0 cr)
  - RELS 5513W [Inactive] [WI] (3.0 cr)
Twin Cities Campus

History B.A.
History Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 to 43
- Degree: Bachelor of Arts

At this critical moment, there are few majors more important to understanding the past, navigating the present, or imagining the future than History. History majors make sense of the world through the study of ancient times, the recent past, and everything in between. History majors are detectives, analysts, critical thinkers, and storytellers. Asking interesting questions about the past and examining a range of oral, written, visual, and material sources, history majors explore and explain how peoples across time and space have lived, loved, built community, warred, reconciled, and made sense of their worlds. Deep analysis invites new understandings of the past and the peoples, movements, ideas, technologies, and organisms propelling change. As much as history is a window into the past, it also helps us understand ourselves, our identities, and how we have come to inhabit the moral, ethical, social, economic, political, religious, national, environmental, ethnic, racial, gender, and sexual communities we live in today. History helps us understand how our present and possible futures grow out of a very usable and interesting past.

History majors develop all of the skills required to thrive in today’s world from an understanding of the engines of change and an ability to assess and interpret conflicting evidence and arguments, to robust oral and written communication skills that will allow you to shape the conversations in your professions and communities. History majors bring powerful skill sets into the world and many go into the legal and medical professions, become business people or scientists, are journalists and teachers, work in the civil or foreign service, run for office, or work in the arts or non-profit sector. Regardless of your career path, a History major will enable you to bring a fresh and critical historical perspective to the communities you live and work in. Historical thinking strengthens communities by encouraging them to think deeply about where they have come from and where they would like to go. This is an incredible time to declare a History major.

Many History majors are double majors. A History major is well paired with the study of Political Science, Economics, Sociology, Psychology, Global Studies, Journalism, Education, foreign languages, Biology, Math, and Engineering. History is a very popular double major due to the broad range of courses offered by our faculty. Students are invited to study local, national, comparative, and global histories, which fascinate them and frequently provide the type of deep contextualization that complements other areas of study.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the History BA is HIST.

At least 18 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Take 11 courses:
(1) Hands-on History methods seminar: HIST 302x
(3) HIST courses at any level
(6) Upper-division HIST courses (see below)
(1) Senior project: HIST 4010W/4010V

Every history major works with history faculty and advising to make sure their course of study includes both breadth and depth. 3 of the 6 upper-division HIST courses must belong to an approved concentration (geographic, temporal or thematic). One to three of the remaining upper-division HIST courses should be outside of the approved concentration. As a history major, you will begin discussing your concentration and your pathway through the major when you declare, then continue that process with your methods instructor, history faculty, and departmental advisors.

History majors are required to complete at least two Writing Intensive courses in the major. One of those WI courses will be the 4010W capstone course. Majors are invited to complete a second WI course at either the 1xxx or 3xxx level.

As many as two AP courses may count as 1xxx-level courses towards the Major Courses requirement in the History BA.

Double majors completing their capstone experience in their non-History major can complete both of their WI History requirements with a total of two courses at either the 1000 or 3000 level.

Students may earn a BA or a minor in history, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Hands-on History Methods Seminar**

Hands-on History seminars pose a series of questions. What is the historian's task? How do historians know what they know? What methods and skills do historians use? This course introduces history majors (and non-majors) to the methods and practices of historical knowledge production and to the philosophy/theory of history. Put slightly differently, the course will introduce students to the work/craft of history as thought and methodology.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- HIST 3020 - Hands-On History (3.0 cr)
- HIST 3021 - Hands-On History: Global Apartheid (3.0 cr)
- HIST 3022 - Hands-On History: The 1960s: A Decade of Change (3.0 cr)
- HIST 302x - Hands-On History (3.0 cr)

**Major Courses**

At least 1 of these 9 courses must be writing intensive. At least 6 courses and 18 credits must be upper-division (3xxx-level or higher).

HIST 5xxx-level courses are at the graduate level, and may have specific prerequisites. Take 9 or more course(s) totaling 27 or more credit(s) from the following:

**Lower-division**

As many as 3 of the Major Courses can be lower-division.

Take 0 - 3 course(s) from the following:
- HIST 1000 - New Topics in History (3.0 cr)
- HIST 1011W - Civilization and the Environment: World History to 1500 [HIS, ENV, WI] (4.0 cr)
- HIST 1012W - The Age of Global Contact [HIS, GP, WI] (4.0 cr)
- HIST 1031W - Europe and the World: Expansion, Encounter, and Exchange to 1500 [HIS, GP, WI] (4.0 cr)
- HIST 1032W - Europe and the World: Expansion, Encounter, and Exchange from 1500 to Present [HIS, GP, WI] (4.0 cr)
- HIST 1301W - Authority and Rebellion: American History to 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1302W - Global America: U.S. History Since 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1307 - Authority and Rebellion: American History to 1865 [HIS] (3.0 cr)
- HIST 1308 - Global America: U.S. History Since 1865 [HIS] (3.0 cr)
- HIST 1361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
- HIST 1362 - Global History of World War II [HIS] (3.0 cr)
- HIST 1411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
- HIST 1809 - The Presidency: Power, Politics, and Policy in the United States (3.0 cr)
- HIST 1842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
- HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
  or GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
- HIST 1082 - Jesus in History [HIS] (3.0 cr)
  or CNES 1082 - Jesus in History [HIS] (3.0 cr)
  or RELS 1082 - Jesus in History [HIS] (3.0 cr)
- HIST 1102 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
  or MEST 1002 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
- HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

**Upper-division**

3 of these 6 upper-division Major Courses must be taken in the student's area of concentration, as approved by the undergraduate
studies office. The remaining 3 credits should be taken outside of the student's concentration.

Take 6 - 9 course(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST 3051</td>
<td>Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)</td>
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<tr>
<td>HIST 3052</td>
<td>Ancient Civilization: Greece (3.0 cr)</td>
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<tr>
<td>HIST 3053</td>
<td>Ancient Civilization: Rome [HIS] (3.0 cr)</td>
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<tr>
<td>HIST 3151W</td>
<td>British History to the 17th Century [HIS, GP, WI] (4.0 cr)</td>
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<td>HIST 3152</td>
<td>British History From the Seventeenth Century [HIS, GP] (3.0 cr)</td>
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<tr>
<td>HIST 3244</td>
<td>History of Eastern Europe [HIS, GP] (3.0 cr)</td>
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<tr>
<td>HIST 3361W</td>
<td>World War I: A Global History [HIS, TS, WI] (3.0 cr)</td>
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<tr>
<td>HIST 3362</td>
<td>Global History of World War II [HIS] (3.0 cr)</td>
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<td>HIST 3411W</td>
<td>The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)</td>
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<td>Soccer: Around the World with the Beautiful Game [HIS, CIV] (3.0 cr)</td>
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<td>War in History: Preparing and Making War in World History [HIS] (3.0 cr)</td>
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<td>Conquest and Conversion: Religion &amp; Empire 1500-1900 (3.0 cr)</td>
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<td>Migrations in Modern Global History [HIS, GP] (3.0 cr)</td>
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<td>Imperialism and Its Critics: Ethical Issues, Literary Representations [LITR, CIV] (3.0 cr)</td>
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<td>War and Peace in Japan Through Popular Culture (4.0 cr)</td>
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<td>Samurai, Geisha, and How They Became Japanese (3.0 cr)</td>
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<td>History of Southeast Asia [GP] (3.0 cr)</td>
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<td>Approaches to the Study of the Middle East (3.0 cr)</td>
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<td>Irish History (3.0 cr)</td>
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<td>Daily Life in Europe: 1300-1800 [HIS, GP, WI] (3.0 cr)</td>
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<td>Human Rights and Crimes Against Humanity (3.0 cr)</td>
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<td>Modern France and Its Empire: Identity, Citizenship and the State 1780 to the Present [HIS, GP] (3.0 cr)</td>
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<td>Game of Thrones: Emperors, Knights and Witches in Central Europe [HIS] (3.0 cr)</td>
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<td>History of Population [SOCS, GP] (3.0 cr)</td>
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<td>Manifest Destiny, Slavery, and the Politics of Expansion: Jacksonian America (3.0 cr)</td>
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<td>Law in American Life: 1865 to Present (3.0 cr)</td>
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<td>Family History in America (3.0 cr)</td>
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<td>U.S. and the World (3.0 cr)</td>
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<td>Supplemental Writing in History [WI] (1.0 cr)</td>
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<td>Doing Roman History: Sources, Methods, and Trends (3.0 cr)</td>
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<td>Medieval Latin Historians (3.0 cr)</td>
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<td>Social History of Russia and Eastern Europe From the Late 19th Century to the Present (3.0 cr)</td>
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<td>Problems in Early American History (3.0 cr)</td>
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<td>Minnesota History Workshop (3.0 - 4.0 cr)</td>
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<td>Historiographies of China, 1000-1700 (3.0 cr)</td>
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or GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
• HIST 3423 - Central American Revolutions (3.0 cr)
or CHIC 3423 - Central American Revolutions (3.0 cr)
• HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
or GLOS 3934 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
• HIST 3429 - Latin American History in Film and Text [AH, GP] (3.0 cr)
or LAS 3429 - Latin American History in Film and Text [AH, GP] (3.0 cr)
• HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
or AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
• HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
or AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• HIST 3435 - History of South Africa from 1910 (3.0 cr)
or AFRO 3205 - History of South Africa from 1910 (3.0 cr)
• HIST 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
or CHIC 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
• HIST 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or CHIC 3446 - Chicana and Chicano History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
• HIST 3455 - West African History: 1800 to Present [GP] (3.0 cr)
or AFRO 3002 - West African History: 1800 to Present [GP] (3.0 cr)
• HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
or EAS 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or EAS 3461H - Honors: Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
• HIST 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - Honors: From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or EAS 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or EAS 3462H - Honors: From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
• HIST 3466 - Religion and Society in Imperial China [HIS] (3.0 cr)
or AMES 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
or RELS 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
• HIST 3468 - Social Change in Modern China (3.0 cr)
or EAS 3468 - Social Change in Modern China (3.0 cr)
or HIST 3468 - Social Change in Modern China (3.0 cr)
or AMES 3468 - Social Change in Modern China (3.0 cr)
• HIST 3469 - History of Women and Family in China, 1600-2000 (3.0 cr)
or AMES 3372 - History of Women and Family in China, 1600-2000 (3.0 cr)
or AMES 3478 - Modern Japan, Meiji to the Present (1686-2000) [HIS] (3.0 cr)
or EAS 3471 - Modern Japan, Meiji to the Present (1686-2000) [HIS] (3.0 cr)
• HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or EAS 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or EAS 3479 - History of Chinese Cities and Urban Life (3.0 cr)
• HIST 3483 - Hmong History Across the Globe (3.0 cr)
or AAS 3483 - Hmong History Across the Globe (3.0 cr)
• HIST 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
or AAS 3486 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
• HIST 3487 - The Vietnam Wars: French Colonialism and U.S. Intervention in Indochina (3.0 cr)
or GLOS 3487 - The Vietnam Wars: French Colonialism and U.S. Intervention in Indochina (3.0 cr)
• HIST 3489 - 20th Century India (3.0 cr)
or GLOS 3969 - 20th Century India (3.0 cr)
• HIST 3492 - Hinduism (3.0 cr)
or AMES 3671 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
• HIST 3493 - Islam: Religion and Culture (3.0 cr)
or AMES 3871 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
• HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
• HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or AMES 3872 - The Cultures of the Silk Road (3.0 cr)
Capstone
Students may take HIST 4010W/V up to four times with a change in topic, but only in their junior or senior years. Students may count any 4010W/V paper as their senior project, so long as the paper receives a grade of C- or better. Students who double major and choose to complete the capstone requirement in their other major may waive the History BA capstone, but are still responsible for taking the 11 (3-4 credit) History courses required for the History BA.

Seminar
The capstone seminar is a faculty-led, themed research seminar in which majors are introduced to advanced research methods and practices. Capstone themes are drawn from our faculty's areas of expertise. The themes are narrow enough to offer students an introduction to both the historiography of the field and a range of primary sources, and broad enough to allow students to find a project of interest. Students develop an original capstone research project based on their own interests.

HIST 4010W - Research Seminar [WI] (4.0 cr)
HIST 4010V - Honors: Research Seminar [WI] (4.0 cr)

Directed Study
HIST 4961W/V are alternatives to the seminars. This option is most appropriate for Donovan winners, honors students, and history majors with a well-developed capstone proposal. Interested students must submit a 2-3 page proposal that identifies a research question, demonstrates a deep familiarity with the relevant historiography, and describes the primary sources that will form the basis of the capstone. Admission is highly selective and limited. Contact the History advisor for deadlines.

HIST 4961W - Major Paper [WI] (4.0 cr)
HIST 4961V - Honors: Major Paper [WI] (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
HIST 3067W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
HIST 3151W - British History to the 17th Century [HIS, GP, WI] (4.0 cr)
HIST 3361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
HIST 3411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
HIST 3691W - The British Empire [WI] (3.0 cr)
HIST 3704W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
or LAS 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
HIST 3868W - Race, War, and Race Wars in American History [CIV, WI] (3.0 cr)
or AFRO 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)
HIST 3875W - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
or AAS 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
HIST 4961W - Major Paper [WI] (4.0 cr)
or HIST 4961V - Honors: Major Paper [WI] (4.0 cr)
Twin Cities Campus
History Minor
History Department
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 14

A history minor is an excellent complement to every major. Students from a range of departments, especially political science, economics, sociology, psychology, global studies, journalism, education, biology, chemical engineering, and foreign languages, frequently minor in history.

At this critical moment, there are no minors more important to understanding the past, navigating the present, or imagining the future than History. History minors make sense of the world through the study of ancient times, the recent past, and everything in between. Asking interesting questions about the past and examining a range of oral, written, visual, and material sources, history minors explore and explain how peoples across time and space have lived, loved, built community, warred, reconciled and made sense of their worlds. As much as history is a window into the past, it also helps us understand ourselves, our identities, and how we have come to inhabit the moral, ethical, social, economic, political, religious, environmental, national, ethnic, racial, gender, and sexual communities we live in today. History helps us understand how our present and possible futures grow out of a very usable and interesting past.

History minors develop all of the skills required to thrive in today’s world from an understanding of the engines of change and an ability to assess and interpret conflicting evidence and interpretations to the robust oral and written communication skills that will allow you to bring fresh and critical historical perspectives to the communities you live and work in. Historical thinking strengthens communities by encouraging them to think deeply about where they have come from and where they would like to go. This is a critical moment and an incredible time to declare a history minor.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in history, but not both.

Minor Courses
Take 5 courses, including at least 14 upper-division credits. HIST 5xxx-level courses are at the graduate level, and may have specific prerequisites.
Take 5 or more course(s) from the following:
Lower-division
Take 0 - 1 course(s) from the following:
- HIST 1000 - New Topics in History (3.0 cr)
- HIST 1011W - Civilization and the Environment: World History to 1500 [HIS, ENV, WI] (4.0 cr)
- HIST 1012W - The Age of Global Contact [HIS, GP, WI] (4.0 cr)
- HIST 1031W - Europe and the World: Expansion, Encounter, and Exchange to 1500 [HIS, GP, WI] (4.0 cr)
- HIST 1032W - Europe and the World: Expansion, Encounter, and Exchange from 1500 to Present [HIS, GP, WI] (4.0 cr)
- HIST 1301W - Authority and Rebellion: American History to 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1302W - Authority and Rebellion: American History to 1865 [HIS] (3.0 cr)
- HIST 1307 - Authority and Rebellion: American History to 1865 [HIS] (3.0 cr)
- HIST 1308 - Global America: U.S. History Since 1865 [HIS] (3.0 cr)
- HIST 1309W - Global America: U.S. History Since 1865 [HIS] (3.0 cr)
- HIST 1361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
- HIST 1362 - Global History of World War II [HIS] (3.0 cr)
- HIST 1411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
- HIST 1809 - The Presidency: Power, Politics, and Policy in the United States (3.0 cr)
- HIST 1842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
- HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
  or GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
- HIST 1082 - Jesus in History [HIS] (3.0 cr)
  or CNES 1082 - Jesus in History [HIS] (3.0 cr)
or RELS 1082 - Jesus in History [HIS] (3.0 cr)
• HIST 1102 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
or MEST 1002 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
• HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
or JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

• Upper-division
  Take 4 - 5 course(s) totaling 14 or more credit(s) from the following:
  • HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
  • HIST 3151W - British History to the 17th Century [HIS, GP, WI] (4.0 cr)
  • HIST 3152 - British History From the Seventeenth Century [HIS, GP] (3.0 cr)
  • HIST 3244 - History of Eastern Europe [HIS, GP] (3.0 cr)
  • HIST 3361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
  • HIST 3362 - Global History of World War II [HIS] (3.0 cr)
  • HIST 3411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
  • HIST 3412 - Soccer: Around the World with the Beautiful Game [HIS, CIV] (3.0 cr)
  • HIST 3413 - War in History: Preparing and Making War in World History [HIS] (3.0 cr)
  • HIST 3414 - Conquest and Conversion: Religion & Empire 1500-1900 (3.0 cr)
  • HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
  • HIST 3416 - Imperialism and its Critics: Ethical Issues, Literary Representations [LITR, CIV] (3.0 cr)
  • HIST 3417W - Food in History [HIS, ENV, WI] (3.0 cr)
  • HIST 3418 - Drink in History [HIS] (3.0 cr)
  • HIST 3426 - Piracy in the Mediterranean: The World of Merchants and Pirates [HIS, GP] (3.0 cr)
  • HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
  • HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
  • HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
  • HIST 3507 - History of Modern Egypt (3.0 cr)
  • HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
  • HIST 3609 - Military History of Medieval Western Europe (3.0 cr)
  • HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
  • HIST 3618 - The Dark Ages Illumined: Medieval Europe to 1050 (3.0 cr)
  • HIST 362 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
  • HIST 3626 [Inactive] (3.0 cr)
  • HIST 3637 - Modern Russia: From Peter the Great to the Present (3.0 cr)
  • HIST 3652 - Early Modern Britain (3.0 cr)
  • HIST 3651 - Irish History (3.0 cr)
  • HIST 3691W - The British Empire [WI] (3.0 cr)
  • HIST 3704W - Daily Life in Europe: 1300-1800 [HIS, GP, WI] (3.0 cr)
  • HIST 3719 [Inactive] (3.0 cr)
  • HIST 3721 - Studies in 20th-Century Europe From the Turn of the Century to the End of World War II: 1900-45 (3.0 cr)
  • HIST 3722 [Inactive] (3.0 cr)
  • HIST 3731 - Modern France and Its Empire: Identity, Citizenship and the State 1780 to the Present [HIS, GP] (3.0 cr)
  • HIST 3746 - Game of Thrones: Emperors, Knights and Witches in Central Europe [HIS] (3.0 cr)
  • HIST 3797 - History of Population [SOCS, GP] (3.0 cr)
  • HIST 3809 - The Peoples of Revolutionary America (3.0 cr)
  • HIST 3811 - Manifest Destiny, Slavery, and the Politics of Expansion: Jacksonian America (3.0 cr)
  • HIST 3812 - The Civil War and Reconstruction (3.0 cr)
  • HIST 3821 - United States in the 20th Century to 1945 [HIS] (3.0 cr)
  • HIST 3822 - Making America Modern: 1945 to Present (3.0 cr)
  • HIST 3834 - Law in American Life, Colonial Era to Civil War (3.0 cr)
  • HIST 3835 - Law in American Life: 1865 to Present (3.0 cr)
  • HIST 3837 [Inactive] (3.0 cr)
  • HIST 3838 - Family History in America (3.0 cr)
  • HIST 3842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
  • HIST 3882 - U.S. and the World (3.0 cr)
  • HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
  • HIST 5111 - Proseminar in the History of Medieval Europe (3.0 cr)
  • HIST 5115 - Medieval Latin Historians (3.0 cr)
  • HIST 5295 - Social History of Russia and Eastern Europe From the Late 19th Century to the Present (3.0 cr)
  • HIST 5379 - Problems in Early American History (3.0 cr)
  • HIST 5381 - Minnesota History Workshop (3.0 - 4.0 cr)
  • HIST 5469 - Historiographies of China, 1000-1700 (3.0 cr)
  • HIST 5547 - Empire and Nations in the Middle East (3.0 cr)
• HIST 5611 - New Directions in the Middle Ages, ca. 300-1100 (3.0 cr)
• HIST 5612 - New Directions in the Middle Ages, ca. 1100-1500 (3.0 cr)
• HIST 5614 - The Medieval Church (3.0 cr)
• HIST 5633 - Socio-Economic History of China (3.0 cr)
• HIST 5642 - U.S. Legal History (3.0 cr)
• HIST 5648 - Development of the Western European Legal Tradition (3.0 cr)
• HIST 5715 - Readings in European Women's History: 1450-1750 (3.0 cr)
• HIST 5720 - Society/Politics: Modern Europe (3.0 cr)
• HIST 5735 - European Women's History; 1750 to the Present (3.0 cr)
• HIST 5777 - Proseminar in Habsburg Central Europe (3.0 cr)
• HIST 5801 - Seminar in Early American History (3.0 cr)
• HIST 5802 - Readings in American History, 1848-Present (3.0 cr)
• HIST 5871 - Readings in U.S. Intellectual History: 19th-20th Centuries (3.0 cr)
• HIST 5900 - Topics in European/Medieval History (1.0 - 4.0 cr)
• HIST 5901 - Latin America Proseminar: Colonial (3.0 cr)
• HIST 5902 - Latin America Proseminar: Modern (3.0 cr)
• HIST 5905 - Topics in European Medieval History (1.0 - 4.0 cr)
• HIST 5910 - Topics in U.S. History (1.0 - 4.0 cr)
• HIST 5920 - Topics in African History (3.0 cr)
• HIST 5940 - Topics in Asian History (1.0 - 4.0 cr)
• HIST 5941 - Readings in Chinese Documents (3.0 cr)
• HIST 5950 - Topics in Latin American History (1.0 - 4.0 cr)
• HIST 5962 - Bell Library Research Seminar in Comparative World History, ca. 1000-1800 CE (3.0 cr)
• HIST 6001 - Public History (3.0 cr)
• HIST 6002 - Public History (3.0 cr)
• HIST 6003 - Public History (3.0 cr)
• HIST 6061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• HIST 6067W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
• HIST 6068 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
• HIST 6211 - History of Sexuality in Europe (3.0 cr)
• HIST 6212 - Dissident Sexualities in U.S. History (3.0 cr)
• HIST 6246 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
• HIST 6247 - Imperial Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
• HIST 6291 - The Viking World: Story, History, and Archaeology (3.0 cr)
• HIST 6292 - The Viking World: Story, History, and Archaeology (3.0 cr)
• HIST 6293 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• HIST 6294 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• HIST 6295 - Magic and Medicine (3.0 cr)
• HIST 6347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)
• HIST 6348 - Women in Modern America (3.0 - 4.0 cr)
• HIST 6349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
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or RELS 3671 - Hinduism (3.0 cr)
or RELS 5671 (Inactive) (3.0 cr)
• HIST 3493 - Islam: Religion and Culture (3.0 cr)
or AMES 3871 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
• HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
• HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• HIST 3503 (Inactive) (3.0 cr)
or RELS 3709 (Inactive) (3.0 cr)
• HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or AMES 3872 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
• HIST 3506 (Inactive) (3.0 cr)
or RELS 3713 (Inactive) (3.0 cr)
• HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or JWST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
• HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
• HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or JWST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
or JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• HIST 3546 - Islam and the West (3.0 cr)
or GLOS 3643 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or RELS 3722 - The Ottoman Empire [HIS, GP] (3.0 cr)
• HIST 3548 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
or JWST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
or RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
• HIST 3611 - Medieval Cities of Europe: 500-1500 [HIS, GP] (3.0 cr)
or MEST 3611 - Medieval Cities of Europe: 500-1500 [HIS, GP] (3.0 cr)
• HIST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
or MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
or RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
• HIST 3616 - France in the Middle Ages (3.0 cr)
or MEST 3616 - France in the Middle Ages (3.0 cr)
or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or RELS 3543 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
• HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
• HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
or ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
• HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
or GLOS 3422 (Inactive) (3.0 cr)
• HIST 3727 - History of the Holocaust (3.0 cr)
or JWST 3520 - History of the Holocaust (3.0 cr)
or RELS 3520 - History of the Holocaust (3.0 cr)
• HIST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)
or JWST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)
or HIST 3767 - Eastern Orthodoxy: History and Culture (3.0 cr)
or RELS 3611 - Eastern Orthodoxy: History and Culture (3.0 cr)
• HIST 3802 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
or RELS 3622 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
• HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
or RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
• HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
• HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
or AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
or CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
• HIST 3864 - African American History: 1619-1865 [HIS, CIV] (3.0 cr)
or AFRO 3864 - African American History: 1619 to 1865 [HIS, CIV] (3.0 cr)
• HIST 3865 - African American History, 1865 to Present (3.0 cr)
or AFRO 3865 - African American History: 1619 to the Present (3.0 cr)
or AFRO 3868W - Race, War, and Race Wars in American History [CIV, WI] (3.0 cr)
or AFRO 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)
• HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or HIST 3875W - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
or AAS 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
or HIST 3877 - Asian American History, 1850-Present [HIS, DSJ] (3.0 cr)
or AAS 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)
or HIST 5831 - Cultural Fallout: The Cold War and Its Legacy: Readings (3.0 cr)
or AMST 8231 - Cultural Fallout: The Cold War and Its Legacy, Readings (3.0 cr)
or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
or AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
or HIST 5932 - The Production of Knowledge, Negotiating the Past, and the Writing of African Histories (3.0 cr)
or AFRO 5932 - The Production of Knowledge, Negotiating the Past, and the Writing of African Histories (3.0 cr)
The undergraduate minor in the history of science, technology, and medicine (HSTM) combines upper-division coursework in the history of science and technology (HSCI) with upper-division coursework in the history of medicine (HMED) to build a humanistic background to the basic applied sciences, technologies and/or healthcare professions. Students interested in the HSTM minor should consult with the director of undergraduate studies for the HSTM program and draw up a plan of study that represents a coherent theme within the history of sciences, technology, and medicine. Normally such a coherent program entails survey coursework in the history of science, the history of technology, or the history of medicine, along with more advanced historical work around a specific field (science, technology, or medicine) or theme (focus on a particular time period, geographical focus, type of history, etc.).

Program Delivery
This program is available:

• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
No more than 3 credits of directed study may count towards the minor.
Take 14 or more credit(s) from the following:

HSCI 1xxx
Any HSCI 1xxx or its cross-list may count towards this requirement.
Take no more than 1 course(s) totaling 0 - 4 credit(s) from the following:

• HSCI 1011 - Digital World [HIS, TS] (3.0 cr)
• HSCI 1212 - Life on Earth: Origins, Evolution & Ecology [HIS, ENV] (4.0 cr)
• HSCI 1714 - Stone Tools to Steam Engines: Technology and History to 1750 [HIS, TS] (3.0 - 4.0 cr)
• HSCI 1715 - History of Modern Technology: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
• HSCI 1814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
• HSCI 1815 - Making Modern Science: Atoms, Genes and Quanta [HIS, GP] (3.0 - 4.0 cr)

• 2xxx-5xxx
Any HSCI, HMED 2xxx, 3xxx, 4xxx, 5xxx, or its cross-list may count towards this requirement.
Take 10 - 14 credit(s) from the following:

• HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
• HMED 3002W - Health Care in History II [HIS, WI] (4.0 cr)
• HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
• HMED 3055 - Women, Health, and History [HIS, DSJ] (3.0 cr)
• HMED 3065 - Body, Soul, and Spirit in Medieval and Renaissance European Medicine (3.0 cr)
• HMED 4965W - Senior Research in Medical History (3.0 cr)
• HSCI 2333V - Honors Course: A Century of Science in Modern America [HIS, CIV, WI] (3.0 cr)
• HSCI 3714 - Stone Tools to Steam Engines: Technology and History to 1750 [HIS, TS] (3.0 - 4.0 cr)
• HSCI 3715 - History of Modern Technology: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
• HSCI 3814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
• HSCI 3815 - Making Modern Science: Atoms, Genes and Quanta [HIS, GP] (3.0 - 4.0 cr)
• HSCI 4060 - Special Topics in History of Technology (3.0 cr)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
• HSEM 2529H (Inactive) (3.0 cr)
• HMED 3075 - Technology and Medicine in Modern America [HIS, TS] (3.0 cr)
  or HMED 5075 - Technology and Medicine in Modern America (3.0 cr)
• HSCI 3211 - Biology and Culture in the 19th and 20th Centuries [HIS, CIV] (3.0 cr)
  or HSCI 5211 - Biology and Culture in the 19th and 20th Centuries [CIV] (3.0 cr)
• HSCI 3242 - Navigating a Darwinian World [HIS] (3.0 cr)
  or HSCI 5242 - Navigating a Darwinian World (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
  or HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)
• HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
  or HSCI 5331 - Technology and American Culture (3.0 cr)
• HSCI 3332 - Science in the Shaping of America [HIS, DSJ] (3.0 cr)
  or HSCI 5332 - Science in the Shaping of America (3.0 cr)
• HSCI 3401 - Ethics in Science and Technology [HIS, CIV] (3.0 cr)
  or HSCI 5401 - Ethics in Science and Technology (3.0 cr)
• HSCI 3421 - Engineering Ethics [HIS, CIV] (3.0 cr)
  or HSCI 5421 - Engineering Ethics (3.0 cr)
• HSCI 3611 - Enlightenment, Revolution, and the Rise of Modern Science [HIS, GP] (3.0 cr)
  or HSCI 5611 - Enlightenment, Revolution, and the Rise of Modern Science (3.0 cr)
• HSCI 4121W - History of 20th-Century Physics [WI] (3.0 cr)
  or PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
  or CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)

**Directed and Independent Study**
Take 0 - 3 credit(s) from the following:
• HSCI 5993 - Directed Studies (1.0 - 15.0 cr)
• HSCI 5994 - Directed Research (1.0 - 15.0 cr)
• HMED 3993 - Directed Study (1.0 - 4.0 cr)
Twin Cities Campus
Human Physiology B.A.
Integrative Biology and Physiology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 55 to 74
- Degree: Bachelor of Arts

The human physiology major concentrates on understanding the functions of the human body from individual cells to organ systems. The program is based upon principles from chemistry, physics, mathematics, and biological sciences.

This major is particularly appropriate for students who intend to enter medical school or graduate study in any of a variety of biological, health, or biomedical sciences. The required courses form a strong core in biomedical science. Many of the required courses are identical to those required for admission to medical school. Students may tailor the overall degree program to specific needs and may choose additional science courses in preparation for medical school, other health sciences professional schools, or graduate school. Students may also take advantage of the freedom to pursue a more diverse undergraduate experience in CLA. Others may benefit from an opportunity to pursue a double major.

For the latest information, visit the human physiology major website: https://www.physiology.umn.edu/degrees-and-programs/undergraduate-program.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the human physiology BA is PHSL.

A given course may only count towards one major requirement.

At least 11 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Quantitative Sequence
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- Take 0 - 1 course(s) from the following:
  - MATH 1272 - Calculus II (4.0 cr)
  - MATH 1572H - Honors Calculus II (4.0 cr)
- Take 0 - 1 course(s) from the following:
Chemistry Sequence

Chemistry
Take exactly 7 course(s) totaling exactly 18 credit(s) from the following:
• CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
• CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)

or Chemistry for the Life Sciences
Take exactly 6 course(s) totaling exactly 13 credit(s) from the following:
• CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
• CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
• CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
• CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
• CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
• CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)

or Honors Chemistry
Take exactly 7 course(s) totaling exactly 19 credit(s) from the following:
• CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
• CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
• CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
• CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
• CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
• CHEM 2312H - Honors Organic Lab (5.0 cr)
• CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Physics Sequence
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• PHYS 1221 - Introductory Physics for Life Science Majors I [PHYS] (4.0 cr)
• PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
• PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• PHYS 1222 - Introductory Physics for Life Science Majors II [PHYS] (4.0 cr)
• PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
• PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

General Biology
General Biology (Preferred)
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
• BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

or Foundations of Biology
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
• BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
• BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

Core Courses

Physiology
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• PHSL 3061 - Principles of Physiology (4.0 cr)
• PHSL 3701 - Physiology Laboratory (2.0 cr)

Advanced Physiology Elective(s)
Take exactly 1 course(s) totaling 1 - 6 credit(s) from the following:
• BIOC 5444 - Muscle (3.0 cr)
• PHSL 3095 - Problems in Physiology (1.0 - 5.0 cr)
• PHSL 4021 - Advanced Physiology and Bioengineering: Bionic Human (3.0 cr)
• PHSL 4031 - Physiological Discussions: Contemporary Topics (2.0 cr)
• PHSL 4242 - Professional Skills Development for Biomedical Scientists (2.0 cr)
• PHSL 4900 - Advanced Physiology Teaching Laboratory (1.0 - 6.0 cr)
• PHSL 5061 - Principles of Physiology for Biomedical Engineering (4.0 cr)
• PHSL 5094 - Research in Physiology (1.0 - 5.0 cr)
• PHSL 5095 - Problems in Physiology (1.0 - 5.0 cr)
• PHSL 5096 - Integrative Biology and Physiology Research Advances (1.0 cr)
• PHSL 5101 - Human Physiology (5.0 cr)
• PHSL 5115 - Clinical Physiology I (3.0 cr)
• PHSL 5116 - Clinical Physiology II (3.0 cr)
• PHSL 5197 - Stress Physiology (1.0 cr)
• PHSL 5201 - Computational Neuroscience I: Membranes and Channels (3.0 cr)
• PHSL 5350 - Humans in Extreme Environments (2.0 cr)
• PHSL 5444 - Muscle (3.0 cr)
• PHSL 5510 - Advanced Cardiac Physiology and Anatomy (2.0 - 3.0 cr)
• PHSL 5511 - Advanced Neuromuscular Junction Physiology (2.0 - 3.0 cr)
• PHSL 5525 - Anatomy and Physiology of the Pelvis and Urinary System (1.0 - 2.0 cr)
• PHSL 5540 - Advanced Exercise Medicine: Physiology and Bioenergetics (1.0 - 2.0 cr)
• PHSL 5702 - Cell Physiology (4.0 cr)
• PHSL 5701 - Physiology Laboratory (1.0 - 2.0 cr)

Biochemistry
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• BIOC 3021 - Biochemistry (3.0 cr)
• or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)

Genetics
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• GCD 3022 - Genetics (3.0 cr)
• or BIOL 4003 - Genetics (3.0 cr)

Cell Biology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• GCD 3033 - Principles of Cell Biology (3.0 cr)
• or BIOL 4004 - Cell Biology (3.0 cr)
• or PHSL 4702 - Cell Physiology (3.0 cr)

Electives
Take exactly 3 course(s) totaling 6 or more credit(s) from the following:
• ANAT 3601 - Principles of Human Anatomy (3.0 cr)
• ANAT 3602 - Principles of Human Anatomy Laboratory (2.0 cr)
• ANAT 3608H - Principles of Human Anatomy Laboratory for Honors Students (3.0 cr)
• ANAT 3611 - Principles of Human Anatomy (3.0 cr)
• ANAT 3612 - Principles of Human Anatomy Laboratory (2.0 cr)
• ANAT 4900 - Directed Studies in Anatomy (1.0 - 6.0 cr)
• ANAT 5525 - Anatomy and Physiology of the Pelvis and Urinary System (1.0 - 2.0 cr)
• BIOC 4xxx
• BIOC 5444 - Muscle (3.0 cr)
• BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOL 4994 - Directed Research (1.0 - 7.0 cr)
• CHEM 4xxx
• CSCI 3xxx
• CSCI 4xxx
• GCC 3016 - Science and Society: Working Together to Avoid the Antibiotic Resistance Apocalypse [TS] (3.0 cr)
• GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• MATH 2xxx
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• PHSL 3095 - Problems in Physiology (1.0 - 5.0 cr)
• PHSL 4xxx
• PHSL 5xxx
• PSY 3011 - Introduction to Learning and Behavior (3.0 cr)
• PSY 3031 - Introduction to Sensation and Perception (3.0 cr)
• PSY 3061 - Introduction to Biological Psychology (3.0 cr)
• PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
• PSY 5031W - Perception [WI] (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
• PSY 5137 - Introduction to Behavioral Genetics (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 5021 - Statistical Analysis (4.0 cr)
• VBS 2032 - General Microbiology With Laboratory (5.0 cr)
• GCC 3007 - Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 5007 - Toward Conquest of Disease [ENV] (3.0 cr)
• GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
or GCC 5014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)

**Intercultural Competency Electives**
These classes provide a cultural perspective on healthcare and/or society and can be taken to fulfill the electives requirement for the major. No more than one 1xxx-level course may count as an elective.
Take 0 or more course(s) from the following:
• ANTH 3003 - Cultural Anthropology (3.0 cr)
• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• ECON 3101 - Intermediate Microeconomics (4.0 cr)
• ECON 5890 - Economics of the Health-Care System (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GLOS 3143 - Living in the Global [CIV] (3.0 cr)
• GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
• SOC 3902 - Other Worlds: Globalization and Culture (3.0 cr)
• GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
• GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
• POL 3464 - The Politics of Economic Inequality (3.0 cr)
• PSY 3301 - Introduction to Cultural Psychology (3.0 cr)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
• ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
• AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
or SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)

*1xxx-level
Take no more than 1 course(s) totaling at most 4 credit(s) from the following:
• GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
• AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  or POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
• ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
  or ANTH 1003V - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)
• GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
  or HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)

Capstone
Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the human physiology BA capstone.
Take 1 - 2 course(s) totaling 1 - 5 credit(s) from the following:
• PHSL 3062W - Research Paper for Physiology Majors [WI] (1.0 cr)

• Honors students
Cum Laude and Magna Cum Laude candidates must register for a minimum of 3 credits. Summa Cum Laude candidates must register for a minimum of 4 credits.
• PHSL 4095H - Honors Problems in Physiology (2.0 - 4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• PHSL 3062W - Research Paper for Physiology Majors [WI] (1.0 cr)
Twin Cities Campus
Individually Designed Interdepartmental B.A.
CLA Dean's Office
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 50
- Degree: Bachelor of Arts

The individually designed interdepartmental major (IDIM) enables students to fulfill program requirements for the BA degree by completing an interdepartmental program of coursework focused on a theme of their own choosing, designed in consultation with faculty and staff advisers. IDIM programs consist of three or four areas of concentration, integrated in such a way that the major has strong thematic unity and coherence.

Working closely with an IDIM advisor, students develop a written proposal and course list that articulates a cohesive and unified interdisciplinary theme. IDIM program proposals must be approved by a committee and three faculty or department advisers with expertise in the areas of concentration. Some departments have established guidelines for students who wish to include concentration areas based in those departments.

For specific information on proposal approval procedures and department guidelines, see the individualized degree programs website at https://cla.umn.edu/academics-experience/majors-minors/individualized-degree-programs

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For certain concentration areas, prerequisite courses must be completed before submitting a program proposal. For certain concentrations, a minimum overall GPA or a minimum tool course GPA is required before a student can submit a program proposal.

Students can declare the major after attending an information session (held two to three times a week) and preparing a preliminary course list. Students are not approved for the degree until they have submitted a program proposal (the submission deadline is once per semester) and the proposal has been approved by a committee and faculty or department advisors.

See the IDIM advisor for more information.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

Students must have their program approved by a committee and three department or faculty advisers.

At least 20 credits in the major must be completed after the program has been approved.

No more than 12 credits of directed study may be applied toward the program.

All incoming CLA freshmen must complete the First-Year Experience course sequence.
Concentration Area Courses
Students must complete at least 50 approved credits from CLA departments distributed among three or four concentration areas, and at least 40 of the 50 credits must be upper division (3xxx or higher). The concentrations may be departmental or thematic in composition, and each must include at least 11 upper division credits. Courses must be chosen in consultation with an advisor.

Take 50 or more credit(s) from the following:
- First Concentration Area
  1xxx or 2xxx first concentration
  Take 11 or more credit(s) from the following:
  - 3xxx or higher first concentration
- Second Concentration Area
  1xxx or 2xxx second concentration
  Take 11 or more credit(s) from the following:
  - 3xxx or higher second concentration
- Third Concentration Area
  Take 11 or more credit(s) from the following:
  - 1xxx or 2xxx third concentration
  - Take 11 or more credit(s) from the following:
    - 3xxx or higher third concentration

Capstone
Students must complete an integrating capstone project via directed study, earning at least 2 credits in conjunction with the project. Projects may vary widely in form, depending on a student's program, and the capstones course designator will change based on the faculty members department. Capstone project proposals must be approved by faculty and staff advisors the semester before the project begins. The project itself must be reviewed and approved by the faculty advisor.

Take 1 or more course(s) totaling 2 or more credit(s) from the following:
- Subgroup 0
  - Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the I.D.I.M. capstone.
  - Capstone (2 cr)
    or Completion of an honors thesis will count for honors students completing a I.D.I.M.

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. Students work with their advisor to select the appropriate course.
Twin Cities Campus
Islamic Studies Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15

The minor in Islamic Studies allows those in other majors to participate in the critical study of Islam and Muslim societies and cultures. It encompasses historical, intellectual, artistic, social, and anthropological approaches to the study of Islam applied through the examination of Islamic texts and other cultural products and through the analysis of social and cultural developments across time and geographic locations.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
The minor requires a total of five courses: one in Islam: Origins and Development and four electives. No course may be used simultaneously in both of these two categories.

Courses may be taken in any order.

At least two courses in the minor must be taken at the University of Minnesota or as learning abroad courses taken for resident credit.

Students majoring in Global Studies and pursuing the Islamic World regional breadth requirement may not pursue the Islamic Studies minor as well. However, students majoring in Global Studies but pursuing a different regional focus may pursue the Islamic Studies minor.

Students majoring in Religious Studies and pursuing an area concentration in Islam may not pursue the Islamic Studies minor. However, students majoring in Religious Studies but pursuing a different area concentration, including a comparative concentration that includes Islam, may pursue the Islamic Studies minor.

Islam: Origins and Development
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• RELS 3704 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
  or CNES 3074 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
• RELS 3712 - Islam: Religion and Culture (3.0 cr)
  or HIST 3493 - Islam: Religion and Culture (3.0 cr)

Electives
It is recommended that elective courses be selected in consultation with the DUS in order to promote coherence, breadth, and depth.
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
• AMES 3638 - Islam and Modernity in South Asia (3.0 cr)
  or RELS 3724 - Islam and Modernity in South Asia (3.0 cr)
• AMES 3679 - Religion and Society in Modern South Asia (3.0 cr)
  or RELS 3679 - Religion and Society in Modern South Asia (3.0 cr)
• ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
  or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
  or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
  or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (3.0 cr)
  or RELS 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (3.0 cr)
• CNES 3074 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
or RELS 3704 - Exploring the Quran: An intellectual odyssey with Islam's holy scripture [AH] (3.0 cr)
- GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
- GLOS 3407 - Global Islamophobia (3.0 cr)
or GLOS 3643 - Islam and the West (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
or GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3718W - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3643 - Islam and the West (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3942 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
- HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
- HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
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or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
- HIST 3493 - Islam: Religion and Culture (3.0 cr)
or RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
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or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3711 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
Twin Cities Campus
Italian Studies B.A.
French & Italian
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 30 to 50
• Degree: Bachelor of Arts

The Italian studies undergraduate program examines Italian and Italian-American literature, culture, society, and history. Courses offered provide a historical perspective from the Middle Ages to the present. Students explore a variety of themes ranging from nation-building and national identity to emigration and travel, to gender relations and feminist discourses, to the study of different narrative forms and representations of Italian and Italian-American culture. Students are encouraged to take courses in other departments when these are related to Italian and Italian-American culture. For further information and updates, see the department website at http://cla.umn.edu/french-italian.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete Italian language study equivalent to four semesters (intermediate level) before beginning the major.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning and Intermediate Italian
Students must complete the following courses or place out through EPT or LPE examinations.
Take 0 - 20 course(s) from the following:
• ITAL 1001 - Beginning Italian I (5.0 cr)
• ITAL 1002 - Beginning Italian II (5.0 cr)
• ITAL 1003 - Intermediate Italian I (5.0 cr)
• ITAL 1004 - Intermediate Italian II (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete 4 semester(s) of Italian with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Italian Studies BA is ITAL.

At least 15 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus. This includes learning abroad courses taken for resident credit.

Students may earn a BA or a minor in Italian, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ITAL 3015 - Reading, Conversation, and Composition (4.0 cr)

Electives

In special circumstances, additional courses can be used to complete this requirement with permission from the Director of Undergraduate Studies. Take 8 or more course(s) totaling 24 or more credit(s) from the following:

Italian Electives

Take 0 or more course(s) from the following:

• ITAL 3640 - Topics in Italian Studies (3.0 cr)
• ITAL 3647 - Urban Transformation in Italy [GP] (3.0 cr)
• ITAL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• ITAL 4307 - Novelistica (3.0 cr)
• ITAL 4970 - Directed Readings (1.0 - 4.0 cr)
• ITAL 5289 - The Narrow Door: Women Writers and Feminist Practices in Italian Literature and Culture (4.0 cr)
• ITAL 5305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
• ITAL 5970 - Directed Readings (1.0 - 4.0 cr)
• ITAL 3201 - Reading Italian Texts: Poetics, Rhetoric, Theory (3.0 cr)
  or ITAL 5201 - Reading Italian Texts: Poetics, Rhetoric, Theory (3.0 cr)
• ITAL 3203 - Italian Travelers: Borders and Travelers (3.0 cr)
  or ITAL 5203 - Italian Travelers: From the Enlightenment to the Present (3.0 cr)
• ITAL 3305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
  or ITAL 5305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
• ITAL 3502 - Making of Modern Italy: From the Enlightenment to the Present. (3.0 cr)
  or ITAL 5502 - Making of Modern Italy: From the Enlightenment to the Present (3.0 cr)

Other Electives

Take 0 or more course(s) from the following:

• ENGL 3040 - Studies in Film (3.0 cr)
• FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
• HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
• HIST 3621 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
• MUS 5620 - Topics in Opera History (3.0 cr)
• ARTH 3315 - The Age of Curiosity: Art, Science & Technology in Europe, 1400-1800 [AH, TS] (3.0 cr)
  or HIST 3708 - The Age of Curiosity: Art, Science & Technology in Europe, 1400-1800 [AH, TS] (3.0 cr)
• ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
• ARTH 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  or HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
• RELS 3612 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  or RELS 5612 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)

Capstone

The capstone involves research and writing in Italian on an approved issue or theme. Projects can include scholarly papers or creative artistic pieces such as musical composition, photography, poetry, fiction, etc. All projects include a research/analytical component. Students must register for an approved elective with concurrent registration in ITAL 3459W. All projects must be developed under the supervision of the faculty teaching the approved elective course.

Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Italian Studies capstone, but are still responsible for taking the 30 upper-division credits required for the Italian Studies BA. They are also still responsible for taking at least one upper-division writing intensive course within the major.

Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:

• ITAL 3459W - Senior Project [WI] (2.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

• ITAL 3459W - Senior Project [WI] (2.0 cr)

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Twin Cities Campus

Italian Studies Minor

French & Italian

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 36

The Italian studies undergraduate minor program examines Italian and Italian-American literature, culture, society, and history. Courses offered provide a historical perspective from the Middle Ages to the present. Students explore a variety of themes ranging from nation-building and national identity to emigration and travel, to gender relations and feminist discourses, to the study of different narrative forms and representations of Italian and Italian-American culture. Students are encouraged to take courses in other departments when these are related to Italian and Italian-American culture. For further information and updates, see the department website at http://cla.umn.edu/french-italian

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 4 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Beginning and Intermediate Italian

Students must complete the following courses or place out through EPT or LPE examinations.

Take 0 - 20 course(s) from the following:

- ITAL 1001 - Beginning Italian I (5.0 cr)
- ITAL 1002 - Beginning Italian II (5.0 cr)
- ITAL 1003 - Intermediate Italian I (5.0 cr)
- ITAL 1004 - Intermediate Italian II (5.0 cr)

Minor Requirements

Students are required to complete 4 semester(s) of Italian with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

Students may earn a BA or a minor in Italian studies, but not both.

Core Course

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

- ITAL 3015 - Reading, Conversation, and Composition (4.0 cr)

Electives

In special circumstances, additional courses can be used to complete this requirement with permission from the Director of Undergraduate Studies.

Take 12 or more credit(s) from the following:

Italian Electives

Take 0 or more course(s) from the following:

- ITAL 3640 - Topics in Italian Studies (3.0 cr)
- ITAL 3647 - Urban Transformation in Italy [GP] (3.0 cr)
- ITAL 3837 - Imagining Italy: Italian and Italian-American Culture, History, and Society through Film [AH, GP] (4.0 cr)
- ITAL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
- ITAL 4307 - Novellistica (3.0 cr)
- ITAL 4970 - Directed Readings (1.0 - 4.0 cr)
- ITAL 5289 - The Narrow Door: Women Writers and Feminist Practices in Italian Literature and Culture (4.0 cr)
- ITAL 5305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
- ITAL 5970 - Directed Readings (1.0 - 4.0 cr)

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• ITAL 3201 - Reading Italian Texts: Poetics, Rhetoric, Theory (3.0 cr)
  or ITAL 5201 - Reading Italian Texts: Poetics, Rhetoric, Theory (3.0 cr)
• ITAL 3203 - Italian Travelers: Borders and Travelers (3.0 cr)
  or ITAL 5203 - Italian Travelers: From the Enlightenment to the Present (3.0 cr)
• ITAL 3305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
  or ITAL 5305 - Staging the Self: Theater and Drama in Modern Italy (3.0 cr)
• ITAL 3502 - Making of Modern Italy: From the Enlightenment to the Present (3.0 cr)
  or ITAL 5502 - Making of Modern Italy: From the Enlightenment to the Present (3.0 cr)
• Other Electives
Take 0 or more course(s) from the following:
  • ENGL 3040 - Studies in Film (3.0 cr)
  • FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
  • HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
  • HIST 3621 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
  • MUS 5620 - Topics in Opera History (3.0 cr)
  • ARTH 3315 - The Age of Curiosity: Art, Science & Technology in Europe, 1400-1800 [AH, TS] (3.0 cr)
  • ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
    or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  • HIST 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  • RELS 3612 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  • RELS 5612 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
Twin Cities Campus
Jewish Studies B.A.
Classical & Near Eastern Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 31 to 48
- Degree: Bachelor of Arts

This broad, interdisciplinary field studies Jewish history and cultures from biblical antiquity to the present. The diverse quality of Jewish civilizations and the unifying forces of religion and language offer ample material for the study of continuity, adaptation, and change.

The undergraduate program offers courses in Hebrew Bible, Second Temple Judaism, the origins and foundational texts of rabbinic Judaism, Jewish history in the ancient, medieval, and modern worlds, Jewish literature, Jewish philosophy, the Holocaust, modern Israel, and the Jewish presence in popular culture. The program has links with the Departments of Classical & Near Eastern Studies, Sociology, History, Spanish & Portuguese Studies, French & Italian Studies, English, German, Nordic, Slavic & Dutch, Political Science, and the School of Music. The University's Center for Holocaust and Genocide Studies also offers courses related to the Nazi Holocaust and its aftermath.

Jewish studies majors acquire marketable skills in critical analysis, research, and writing that are applicable across all disciplines and in a variety of professions. In addition, majors gain cross-cultural awareness and sensitivity that is sought after in the workplace, as well as a historical awareness of the complexities that define the modern world. Jewish studies majors have access to undergraduate research opportunities and receive assistance in identifying internships and other professionalizing activities.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of Hebrew.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Jewish Studies BA is JWST.

At least 14 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BA or a minor in Jewish studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Major Language Requirement
Beginning and Intermediate Hebrew
Take either the Modern or Biblical Hebrew 3-course language sequence for 14-15 credits. Students with prior knowledge may be exempt from taking some or all of these courses. See the Hebrew Language Coordinator for more information.
Take 0 - 3 course(s) totaling 0 - 15 credit(s) from the following:
Modern Hebrew
HEBR 1001 - Beginning Hebrew I (5.0 cr)
HEBR 1002 - Beginning Hebrew II (5.0 cr)
HEBR 3011 - Intermediate Hebrew I (5.0 cr)

or Biblical Hebrew

HEBR 1101 - Beginning Biblical Hebrew I (5.0 cr)
HEBR 1102 - Beginning Biblical Hebrew II (5.0 cr)
HEBR 3101 - Intermediate Biblical Hebrew I (4.0 cr)

Intermediate and Advanced Hebrew

Students are required to complete at least one course in Biblical or Modern Hebrew at the 4th semester or beyond and may not be exempted based on prior knowledge. Students with prior knowledge of Biblical or Modern Hebrew should consult the major program adviser for appropriate placement in each sequence.

Take 1 or more course(s) totaling 3 - 5 credit(s) from the following:

• HEBR 3012 - Intermediate Hebrew II (5.0 cr)
• HEBR 3090 - Advanced Modern Hebrew (3.0 cr)
• HEBR 3102 - Intermediate Biblical Hebrew II (4.0 cr)
• HEBR 5090 - Advanced Modern Hebrew (3.0 cr)
• HEBR 5200 - Advanced Classical Hebrew (3.0 cr)

Foundation Course

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

• JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• RELS 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

History and Culture Courses

A total of 7 courses are required. Take a minimum of two courses from each Emphasis Area: (1) Jewish History & Culture in the Ancient and Medieval Worlds; and (2) Jewish History, Culture, Politics and Society in the Modern World. Within each Emphasis Area, at least one of the two required courses must be from the Texts & Languages course group. The remaining three courses can be taken from any History and Culture course group.

Take 7 or more course(s) totaling 21 or more credit(s) from the following:

Jewish History & Culture in the Ancient and Medieval Worlds Emphasis Area

Take at least one “Texts & Languages” course, and one additional course from either sub-group of the Ancient and Medieval Worlds Emphasis Area. Note: students who have completed the 4th semester, or beyond, of Modern Hebrew may count a maximum of two of the following courses toward this sub-requirement: HEBR 1101, 1102, 3101 or 3102.

Take 2 or more course(s) from the following:

Text & Languages

Take 1 or more course(s) from the following:

• HEBR 5200 - Advanced Classical Hebrew (3.0 cr)
• JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• CNES 3016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• CNES 5016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• JWST 3115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
• CNES 3115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
• RELS 3115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
• RELS 5115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
• JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
• CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
• RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
• JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• JWST 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
• ANTH 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
• CNES 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
• RELS 3206 - Sex, Murder, and Bodily Discharges: Purity and Pollution in the Ancient World (3.0 cr)
Students who double major and choose to complete the capstone requirement in their other major may waive the Jewish Studies BA.

**JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)**
- or **CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)**
- or **RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)**

**JWST 5204 - The Dead Sea Scrolls (3.0 cr)**
- or **CNES 5204 - The Dead Sea Scrolls (3.0 cr)**
- or **RELS 5204 - The Dead Sea Scrolls (3.0 cr)**

**Additional Ancient/Medieval Options**

Take 0 or more course(s) from the following:

- **JWST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)**
- or **HIST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)**

**JWST 3515 - Multiculturalism in Modern Israel: how communities, ideologies, and identities intersect [GP] (3.0 cr)**

**JWST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)**
- or **HIST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)**

**JWST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)**
- or **HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)**
- or **RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)**

**JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)**
- or **HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)**
- or **RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)**

**JWST 3520 - History of the Holocaust (3.0 cr)**
- or **HIST 3727 - History of the Holocaust (3.0 cr)**
- or **RELS 3520 - History of the Holocaust (3.0 cr)**

**JWST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)**
- or **HIST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)**

**JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)**
- or **GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)**
- or **RELS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)**
- or **SOC 4315 - Never Again! Memory & Politics after Genocide (3.0 cr)**

**Capstone**

Students who double major and choose to complete the capstone requirement in their other major may waive the Jewish Studies BA.
capstone, but they do need to replace 3 of the 4 credits with another history and culture course.
Take 1 - 2 course(s) totaling exactly 4 credit(s) from the following:

**JWST 4000W**
Students conduct independent research under the supervision of a faculty sponsor, resulting in a substantial research paper that makes an independent contribution to scholarship rather than merely recapitulating existing claims. Students demonstrate a synthetic mastery of relevant content within the Jewish Studies curriculum, an understanding of appropriate methodologies, an awareness of the topic's significance within the field, and mastery of the conventions of academic writing.

- JWST 4000W - Final Project, Writing Intensive [WI] (4.0 cr)

**JWST 4001W + Additional History and Culture Course**
Students conduct research in the context of a 3xxx-5xxx course, resulting in a paper that goes beyond the scope/rigor of the paper otherwise required. The paper should make an independent contribution to scholarship rather than recapitulating existing claims and demonstrate a synthetic mastery of relevant content within Jewish Studies, an understanding of appropriate methodology, an awareness of the topic's significance within the field, and mastery of the conventions of academic writing.

- JWST 4001W - Final Project, Writing Intensive [WI] (1.0 cr) with An additional History and Culture course from the above list, excluding any HEBR course. Instructor permission is required in order to combine a given course with JWST 4001W.

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:

- JWST 4000W - Final Project, Writing Intensive [WI] (4.0 cr)
- JWST 4001W - Final Project, Writing Intensive [WI] (1.0 cr)
- JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or CNES 3016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or CNES 5016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
Twin Cities Campus
Jewish Studies Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 24

The Jewish studies minor allows students to develop an additional concentration in the academic study of Jewish history and culture. The diverse quality of Jewish civilizations and the unifying forces of religion and language offer ample material for the study of continuity, adaptation, and change, complementing other CLA majors and contributing a comparative focus. The undergraduate program offers courses in Hebrew Bible, Second Temple Judaism, the origins and foundational texts of rabbinic Judaism, Jewish history in the ancient, medieval, and modern worlds, Jewish literature, Jewish philosophy, the Holocaust, modern Israel, and the Jewish presence in popular culture. The program has links with the Departments of Classical & Near Eastern Studies, Sociology, History, Spanish & Portuguese Studies, French & Italian Studies, English, German, Nordic, Slavic & Dutch, Political Science, and the School of Music. The University's Center for Holocaust and Genocide Studies also offers courses related to the Nazi Holocaust and its aftermath.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
The minor consists of a minimum of six courses in JWST or other departments approved by the DUS.

Up to 10 credits of biblical and/or modern Hebrew courses (3xxx or above) may count toward the minor. Students who wish to take introductory courses (1xxx or 2xxx) of a second language, in addition to four semesters of coursework in a first foreign language may count up to 10 credits towards the Minor Course requirements, if relevant to Jewish Studies, and approved by the DUS. This applies to students who have studied modern Hebrew but wish to add biblical Hebrew, or vice versa.

Students may earn a BA or a minor in Jewish studies, but not both.

Foundation Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

History and Culture Courses
At least one course must be chosen from each of the following emphasis areas: (1) Jewish History and Culture in the Ancient and Medieval Worlds; (2) Jewish History, Culture, Politics and Society in the Modern World. Up to 10 credits of Intermediate and Advanced Hebrew can count towards the minor.

Take 5 or more course(s) totaling 15 or more credit(s) from the following:

Jewish History & Culture in the Ancient and Medieval Worlds Emphasis Area
Take 1 or more course(s) from the following:
• JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or CNES 3016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or CNES 5016W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• JWST 3115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
  or JWST 5115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
  or CNES 3115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
  or CNES 5115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
  or RELS 3115 - Midrash: Reading and Retelling the Hebrew Bible (3.0 cr)
The University of Minnesota is an equal opportunity educator and employer.
Information current as of September 02, 2020
• Intermediate and Advanced Hebrew
  Take 0 - 10 credit(s) from the following:
  • HEBR 3011 - Intermediate Hebrew I (5.0 cr)
  • HEBR 3012 - Intermediate Hebrew II (5.0 cr)
  • HEBR 3090 - Advanced Modern Hebrew (3.0 cr)
  • HEBR 3101 - Intermediate Biblical Hebrew I (4.0 cr)
  • HEBR 3102 - Intermediate Biblical Hebrew II (4.0 cr)
  • HEBR 5090 - Advanced Modern Hebrew (3.0 cr)
  • HEBR 5200 - Advanced Classical Hebrew (3.0 cr)
Twin Cities Campus

Journalism B.A.

School of Journalism & Mass Communication

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 37
- Degree: Bachelor of Arts

The Journalism major prepares students for careers such as news reporting, writing, editing, producing, and photojournalism in traditional and emerging media. Students learn how to inform the public through newspapers, television, radio, magazines, blogs, websites, mobile apps, and social media. The major also prepares students for careers outside the traditional and emerging news media as they learn to write and edit content and create stories and images for a broad range of audiences. The program offers a variety of professional courses and workplace experiences at the beginning, intermediate, and advanced levels. The major is based on a liberal arts foundation, knowledge of the social context in which the profession is practiced, and the skills and experiences needed to succeed in the marketplace.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 already admitted to the degree-granting college
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students must apply to the major. To apply, students must have completed, or be enrolled in, JOUR 1001 and at least 30 graded (A-F) credits, including at least one semester of study (13 credits) at the University of Minnesota Twin Cities campus. Students must write a statement of intent for the major application. The statement of intent provides a writing sample for the Admissions Committee, addressing information about academic interests, professional goals, and mass communication or related experience, if any.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Preparatory Course

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
- or JOUR 1001H - Media in a Changing World [SOCS, TS] (3.0 cr)

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Journalism BA is JOUR.

The 120-credit requirement must include at least 72 non-JOUR credits. Total program credits may not exceed 48.
At least 24 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may combine the Journalism BA with the Digital Media Studies minor, but not with the Mass Communication minor.

Students may earn no more than one undergraduate major in Journalism, Strategic Communication: Advertising and Public Relations, and Mass Communication.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• JOUR 3004 - Information for Mass Communication (3.0 cr)
  or JOUR 3004H - Information for Mass Communication (3.0 cr)

News Reporting and Writing
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• JOUR 3101W - News Reporting and Writing [WI] (3.0 cr)

Mass Communication Law
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• JOUR 3776 - Mass Communication Law (3.0 cr)
  or JOUR 3776H - Mass Communication Law (3.0 cr)

Professional Courses
Take exactly 15 credit(s) from the following:
3xxx
Take no more than 3 course(s) from the following:
• JOUR 3102 - Multimedia Production and Storytelling (3.0 cr)
• JOUR 3103 - Interactive and Data Journalism (3.0 cr)
• JOUR 3121 - Intermediate News Reporting (3.0 cr)
• JOUR 3155 - Editing for Print and Digital Audiences (3.0 cr)
• JOUR 3173W - Magazine & Feature Writing [WI] (3.0 cr)
• JOUR 3321 - Media Design (3.0 cr)
• JOUR 3451 - TV, Radio and Digital News Reporting (3.0 cr)
• JOUR 3690 - Special Topics in Journalism Skills (3.0 cr)

4xxx-5xxx
Take 2 or more course(s) from the following:
• JOUR 4171 - Covering the Arts (3.0 cr)
• JOUR 4172 - Sports Reporting (3.0 cr)
• JOUR 4173 - Podcast Production and Storytelling (3.0 cr)
• JOUR 4175 - Brovald-Sim Community Journalism Practicum (3.0 cr)
• JOUR 4302 - Photojournalism (3.0 cr)
• JOUR 4303 - Advanced Visual Storytelling (3.0 cr)
• JOUR 4451 - Long-form Video Reporting (3.0 cr)
• JOUR 4452 - Newscast Producing (3.0 cr)
• JOUR 4590 - Special Topics in Journalism Skills (3.0 cr)
• JOUR 5131 - In-Depth Reporting (3.0 cr)
• JOUR 5174 - Magazine Editing and Production (3.0 cr)
• JOUR 5196 - Field Based Practicum (3.0 cr)

Context Courses
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
3xxx
Take no more than 2 course(s) totaling at most 6 credit(s) from the following:
• JOUR 3005 - Mass Media Effects [SOCS] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 3007 - The Media in American History and Law: Case Studies [HIS] (3.0 cr)
• JOUR 3201 - Principles of Strategic Communication (3.0 cr)
• JOUR 3551 - The Business of Digital Media: Innovation, Disruption, and Adaptation [TS] (3.0 cr)
• JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
• JOUR 3590 - Special Topics in Mass Communication: Context (3.0 cr)
• JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
• JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
• JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
• JOUR 3771 - Media Ethics [CIV] (3.0 cr)
• JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
• JOUR 3796 - Media and Politics (3.0 cr)
or POL 3796 - Media and Politics (3.0 cr)
• 4xxx-5xxx
  Take 1 or more course(s) from the following:
  • JOUR 4251 - Psychology of Advertising (3.0 cr)
  • JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
  • JOUR 4274W - Digital Advertising: Theory and Practice (3.0 cr)
  • JOUR 4590 - Special Topics in Mass Communication: Context (3.0 cr)
  • JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• JOUR 4733V - Honors Thesis Seminar [WI] (3.0 cr)
• JOUR 4801 - Global Communication (3.0 cr)
• JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)
• JOUR 5514 - Mass Communication and Public Health (3.0 cr)
• JOUR 5552 - Law of Internet Communication (3.0 cr)
• JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• JOUR 5601W - History of Journalism [WI] (3.0 cr)
• JOUR 5725 - Management of Media Organizations (3.0 cr)
• JOUR 5777 - Contemporary Problems in Freedom of Speech and Press (3.0 cr)

Capstone
The capstone requirement is fulfilled by taking JOUR 4995 after 90 credits have been earned. Students who double major within CLA can choose to complete the capstone requirement in their other major and only have to complete 36 credits within the major.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• JOUR 4995 - Capstone (1.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• JOUR 3101W - News Reporting and Writing [WI] (3.0 cr)
• JOUR 3173W - Magazine & Feature Writing [WI] (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 5601W - History of Journalism [WI] (3.0 cr)
• JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
Twin Cities Campus
Latin Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 17 to 28

The minor program permits those who have satisfied Latin language requirement to read Latin authors of antiquity and the Middle Ages and to add to their knowledge of Roman and medieval civilization.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introductory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• CNES 1003 - World of Rome [HIS] (3.0 cr)
• CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
  or CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
• Other intro course may be taken with DUS approval.

First-Year Latin
In select cases, students with advanced proficiency may be exempt from taking one or both of these courses. Placement is determined by the Latin Language Coordinator.
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
• LAT 1001 - Beginning Latin I (5.0 cr)
• LAT 1002 - Beginning Latin II (5.0 cr)

Minor Requirements
Students are required to complete 2 semester(s) of Latin, with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

Students may earn a BA or a minor in Latin, but not both.

Intermediate Latin Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• LAT 3003 - Intermediate Latin Prose (4.0 cr)
• LAT 3004 - Intermediate Latin Poetry (4.0 cr)

Latin Elective
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• LAT 5100 - Advanced Reading (3.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
• LAT 5701 - Latin Prose Composition (3.0 cr)
• LAT 5703 - Epigraphy (3.0 cr)
• GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Electives
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
• CNES 3104 [Inactive] (3.0 cr)
• CNES 3105 [Inactive] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
• HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
• HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
• LAT 5100 - Advanced Reading (3.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
• LAT 5701 - Latin Prose Composition (3.0 cr)
• LAT 5703 - Epigraphy (3.0 cr)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• CNES 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  or HIST 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
  or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
  or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
  or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3108 [Inactive] (3.0 cr)
  or RELS 3541 [Inactive] (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
  or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or CNES 3552 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
• CNES 5013 [Inactive] (3.0 cr)
  or LAW 6029 [Inactive] (3.0 cr)
Twin Cities Campus
Linguistics B.A.
Linguistics, Institute of
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 34
- Degree: Bachelor of Arts

Linguistics is the scientific study of human language. Courses explore the principles governing the structure of natural languages, how languages are acquired by children and adults, the role of language in human cognition and social interaction, and how languages change over time.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Linguistics BA is LING.

At least 15 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BA or a minor in linguistics, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Introduction to Linguistics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
- LING 3001H - Honors: Introduction to Linguistics [SOCS] (4.0 cr)
- LING 5001 - Introduction to Linguistics (4.0 cr)

Syntax, Phonology, and Semantics
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:

Syntax
Honors students may take LING 5201 in place of 4201.
- LING 4201 - Syntax I (3.0 cr)
- LING 5201 - Syntactic Theory I (3.0 cr)

Phonology
Honors students may take LING 5302 in place of 4302W.
- LING 4302W - Phonology I [WI] (3.0 cr)
- LING 5302 - Phonological Theory I (3.0 cr)

Semantics
- LING 5205 - Semantics (3.0 cr)
• Syntax II or Phonology II
   Honors students may take LING 5202 or 5303 in place of 4202/4303.
   • LING 4202 - Syntax II (3.0 cr)
   • LING 5202 - Syntactic Theory II (3.0 cr)
   • LING 4303 - Phonology II (3.0 cr)
   • LING 5303 - Phonological Theory II (3.0 cr)

Electives
Take 15 or more credit(s) from the following:

Lower-division LING
Take 0 - 4 credit(s) from the following:
   • LING 1701 - Language and Society [DSJ] (4.0 cr)
   • LING 1800 - Topics in Linguistics (1.0 - 4.0 cr)
   • LING 19xx - Freshman Seminar

Upper-division LING
Take 11 - 15 credit(s) from the following:
   • LING 3051H - Honors: Thesis (3.0 cr)
   • LING 3101W - Languages of the World [WI] (3.0 cr)
   • LING 3900 - Topics in Linguistics (1.0 - 4.0 cr)
   • LING 4202 - Syntax II (3.0 cr)
   • LING 4303 - Phonology II (3.0 cr)
   • LING 5105 - Field Methods in Linguistics I (4.0 cr)
   • LING 5106 - Field Methods in Linguistics II (4.0 cr)
   • LING 5202 - Syntactic Theory II (3.0 cr)
   • LING 5206 - Linguistic Pragmatics (3.0 cr)
   • LING 5303 - Phonological Theory II (3.0 cr)
   • LING 5461 - Conversation Analysis (3.0 cr)
   • LING 5462 - Field Research in Spoken Language (3.0 cr)
   • LING 5801 - Introduction to Computational Linguistics (3.0 cr)
   • LING 5900 - Topics in Linguistics (1.0 - 4.0 cr)
   • LING 5993 - Directed Study (1.0 - 3.0 cr)
   • LING 3601 - Historical Linguistics (3.0 cr)
   or LING 5601 - Historical Linguistics (3.0 cr)

Related Coursework
As many as 6 credits from an allied discipline can count towards the Elective Requirement. This list is not exhaustive, courses not listed below must be approved by the director of undergraduate studies.
Take 0 - 6 credit(s) from the following:
   • ANTH 3005W - Language, Culture, and Power [SOCIS, DSJ, WI] (4.0 cr)
   • ANTH 4035 - Ethnographic Research Methods (3.0 cr)
   • CHN 5120 - (inactive) (4.0 cr)
   • CPSY 4345 - Language Development and Communication (3.0 cr)
   • FREN 3500 - Linguistic Analysis of French (3.0 cr)
   • FREN 3521 - History of the French Language (3.0 cr)
   • FREN 3531 - Sociolinguistics of French [GP] (3.0 cr)
   • FREN 3541 - Oral Discourse of French (3.0 cr)
   • GER 5711 - History of the German Language I (3.0 cr)
   • GER 5712 - History of the German Language II (3.0 cr)
   • LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
   • PHIL 3231 - Philosophy and Language (4.0 cr)
   • PHIL 4231 - Philosophy of Language (3.0 cr)
   • PHIL 5201 - Symbolic Logic I (4.0 cr)
   • PHIL 5202 - Symbolic Logic II (4.0 cr)
   • PHIL 5211 - Modal Logic (4.0 cr)
   • PSY 5054 - Psychology of Language (3.0 cr)
   • SLHS 3303 - Language Acquisition and Science (3.0 cr)
   • SLHS 3304 - Phonetics (3.0 cr)
   • SPAN 3701 - Structure of Spanish: Phonology and Phonetics (3.0 cr)
   • SPAN 3702 - Structure of Spanish: Morphology and Syntax (3.0 cr)
   • SPAN 3703 - Origins and History of Spanish and Portuguese (3.0 cr)
   • SPAN 3730 - Topics in Hispanic Linguistics (3.0 cr)
   • SPAN 5701 - History of Ibero-Romance (3.0 cr)
   • SPAN 5711 - The Structure of Modern Spanish: Phonology (3.0 cr)
   • SPAN 5714 - Theoretical Foundations of Spanish Syntax (3.0 cr)
   • SPAN 5715 - The Structure of Modern Spanish: Semantics (3.0 cr)
   • SPAN 5716 - Structure of Modern Spanish: Pragmatics (3.0 cr)
• SPAN 5930 - Topics in Ibero-Romance Linguistics (3.0 cr)
• ANTH 3015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
or ANTH 5015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)

**Capstone**
The capstone in Linguistics consists of a 15-25 page research paper. Students typically expand and revise work done in a previous course. The previous work could be a term paper, squib, group project, or in some cases an oral presentation. The topic should be approved by the course instructor before registration for the seminar. Students taking LING 4901W must complete the course with at least an S grade.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- Students who double major and choose to complete the capstone requirement in their other major may waive the Linguistics BA capstone, and they do not need to replace the 3 credits.
- **Capstone Seminar**
  - LING 4901W - Capstone Seminar in Linguistics [WI] (3.0 cr)
- **Honors Thesis**
  - Students seeking honors in Linguistics should take LING 3052V to fulfill the Linguistics capstone. Note: LING 3051H is a prerequisite for LING 3052V. LING 3051H counts towards the elective requirement.
  - LING 3052V - Honors: Thesis [WI] (3.0 cr)

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
- LING 3052V - Honors: Thesis [WI] (3.0 cr)
- LING 3101W - Languages of the World [WI] (3.0 cr)
- LING 4302W - Phonology I [WI] (3.0 cr)
- LING 4901W - Capstone Seminar in Linguistics [WI] (3.0 cr)
- ANTH 3015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
or ANTH 5015W - Biology, Evolution, and Cultural Development of Language & Music [SOCS, WI] (3.0 cr)
Twin Cities Campus
Linguistics Minor
Linguistics, Institute of
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

Linguistics is the scientific study of human language. Courses explore the principles governing the structure of natural languages, how languages are acquired by children and adults, the role of language in human cognition and social interaction, and how languages change over time.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students must meet with the director of undergraduate studies to declare a minor in linguistics.

Students may earn a BA or a minor in linguistics, but not both.

Introduction to Linguistics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
• LING 3001H - Honors: Introduction to Linguistics [SOCS] (4.0 cr)
• LING 5001 - Introduction to Linguistics (4.0 cr)

Syntax and Phonology
Take exactly 2 course(s) totaling 6 or more credit(s) from the following:
Syntax
Honors students may take LING 5201 in place of 4201.
• LING 4201 - Syntax I (3.0 cr)
or LING 5201 - Syntactic Theory I (3.0 cr)
• Phonology
Honors students may take LING 5302 in place of 4302W.
• LING 4302W - Phonology I [WI] (3.0 cr)
or LING 5302 - Phonological Theory I (3.0 cr)

Electives
Take 6 or more credit(s) from the following:
Lower-division Electives
Take at most 4 credit(s) from the following:
• LING 1701 - Language and Society [DSJ] (4.0 cr)
• LING 1800 - Topics in Linguistics (1.0 - 4.0 cr)
• LING 19xx - Freshman Seminar

Upper-division Electives
Take 2 or more credit(s) from the following:
• LING 3051H - Honors: Thesis (3.0 cr)
• LING 3101W - Languages of the World [WI] (3.0 cr)
• LING 3900 - Topics in Linguistics (1.0 - 4.0 cr)
• LING 4202 - Syntax II (3.0 cr)
• LING 4303 - Phonology II (3.0 cr)
• LING 5105 - Field Methods in Linguistics I (4.0 cr)
• LING 5106 - Field Methods in Linguistics II (4.0 cr)
• LING 5202 - Syntactic Theory II (3.0 cr)
• LING 5205 - Semantics (3.0 cr)
• LING 5206 - Linguistic Pragmatics (3.0 cr)
• LING 5303 - Phonological Theory II (3.0 cr)
• LING 5461 - Conversation Analysis (3.0 cr)
• LING 5462 - Field Research in Spoken Language (3.0 cr)
• LING 5801 - Introduction to Computational Linguistics (3.0 cr)
• LING 5900 - Topics in Linguistics (1.0 - 4.0 cr)
• LING 5993 - Directed Study (1.0 - 3.0 cr)
• LING 3601 - Historical Linguistics (3.0 cr)
  or LING 5601 - Historical Linguistics (3.0 cr)
Mass Communication B.A.
School of Journalism & Mass Communication
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 37
- Degree: Bachelor of Arts

Mass communication is the study of communicating with the masses, but is also about media storytelling with strategy and purpose. The study of mass communication is centered around how messages persuade and affect the behavior and opinion of the person or people receiving the content. This major is designed for students who wish to pursue a liberal arts approach to the study of mass communication institutions, processes, effects, research methods, and analysis through the lens of economic sociology, politics, psychology, law, and other disciplines. The major helps students develop research methods and analysis skills that can be applied to a number of different fields, including law, academia, and the professional sector. Students can choose a program emphasis in areas such as history, law, media effects, media industry studies, international communications, or other aspects of the mass communication field.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 already admitted to the degree-granting college
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students must apply to the major. To apply, students must have completed, or be enrolled in, JOUR 1001 and at least 30 graded (A-F) credits, including at least one semester of study (13) at the University of Minnesota Twin Cities Campus. Students must write a statement of intent for the major application. The statement of intent provides a writing sample for the Admissions Committee, addressing information about academic interests, professional goals, and mass communication or related experience, if any.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
- JOUR 1001H - Media in a Changing World [SOCS, TS] (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Mass Communication BA is JOUR.
The 120-credit requirement must include at least 72 non-JOUR credits. Total program credits may not exceed 48.

At least 24 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may combine the Mass Communication BA with the Digital Media Studies minor, but not with the Mass Communication minor.

Students may earn no more than one undergraduate major in Journalism, Strategic Communication: Advertising and Public Relations, and Mass Communication.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Core Course**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 3004 - Information for Mass Communication (3.0 cr)
- JOUR 3004H - Information for Mass Communication (3.0 cr)

**Context Courses**
Students must take 2 or more 4xxx or 5xxx courses from the list below.
Take exactly 30 credit(s) including 4 or more sub-requirements(s) from the following:

- **History**
  Take 1 or more course(s) from the following:
  - JOUR 3007 - The Media in American History and Law: Case Studies [HIS] (3.0 cr)
  - JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
  - JOUR 5601W - History of Journalism [WI] (3.0 cr)
  - JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)

- **International/Multicultural**
  Take 1 or more course(s) from the following:
  - JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
  - JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
  - JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
  - JOUR 4801 - Global Communication (3.0 cr)

- **Media Effects**
  Take 1 or more course(s) from the following:
  - JOUR 3005 - Mass Media Effects [SOCS] (3.0 cr)
  - JOUR 3006 - Visual Communication (3.0 cr)
  - JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
  - JOUR 4251 - Psychology of Advertising (3.0 cr)
  - JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
  - JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)
  - JOUR 5541 - Mass Communication and Public Health (3.0 cr)

- **Media and Society**
  Take 1 or more course(s) from the following:
  - JOUR 3551 - The Business of Digital Media: Innovation, Disruption, and Adaptation [TS] (3.0 cr)
  - JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
  - JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
  - JOUR 3771 - Media Ethics [CIV] (3.0 cr)
  - JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
  - JOUR 3776 - Mass Communication Law (3.0 cr)
  - or JOUR 3776H - Mass Communication Law (3.0 cr)
  - JOUR 3796 - Media and Politics (3.0 cr)
  - or POL 3796 - Media and Politics (3.0 cr)
  - JOUR 4274W - Advertising in Society [WI] (3.0 cr)
  - JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
  - or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
  - JOUR 5552 - Law of Internet Communication (3.0 cr)
  - JOUR 5725 - Management of Media Organizations (3.0 cr)
  - JOUR 5777 - Contemporary Problems in Freedom of Speech and Press (3.0 cr)

- **Additional Courses**
  Take 0 - 3 course(s) totaling 0 - 9 credit(s) from the following:
  - JOUR 3101W - News Reporting and Writing [WI] (3.0 cr)
  - JOUR 3102 - Multimedia Production and Storytelling (3.0 cr)
  - JOUR 3103 - Interactive and Data Journalism (3.0 cr)
  - JOUR 3121 - Intermediate News Reporting (3.0 cr)
  - JOUR 3155 - Editing for Print and Digital Audiences (3.0 cr)
• JOUR 3173W - Magazine & Feature Writing [WI] (3.0 cr)
• JOUR 3201 - Principles of Strategic Communication (3.0 cr)
• JOUR 3241W - Advertising Strategy and Creative Development [WI] (3.0 cr)
• JOUR 3251 - Evaluative Research in Strategic Communication (3.0 cr)
• JOUR 3253 - Account Planning (3.0 cr)
• JOUR 3261 - Media Planning (3.0 cr)
• JOUR 3275 - Digital Strategy in Strategic Communication (3.0 cr)
• JOUR 3279W - Professional Writing for Strategic Communication [WI] (3.0 cr)
• JOUR 3321 - Media Design (3.0 cr)
• JOUR 3451 - TV, Radio and Digital News Reporting (3.0 cr)
• JOUR 3690 - Special Topics in Journalism Skills (3.0 cr)
• JOUR 3790 - Special Topics in Strategic Communication Skills - Execution (3.0 cr)
• JOUR 3890 - Special Topics in Strategic Communication Skills - Planning (3.0 cr)
• JOUR 4171 - Covering the Arts (3.0 cr)
• JOUR 4172 - Sports Reporting (3.0 cr)
• JOUR 4173 - Podcast Production and Storytelling (3.0 cr)
• JOUR 4175 - Brovald-Sim Community Journalism Practicum (3.0 cr)
• JOUR 4242 - Advertising Portfolio Development (3.0 cr)
• JOUR 4243 - Digital Content Development and Production for Brand Communications (3.0 cr)
• JOUR 4259 - Strategic Communication Case Analysis (3.0 cr)
• JOUR 4262 - Management for Strategic Communication (3.0 cr)
• JOUR 4302 - Photojournalism (3.0 cr)
• JOUR 4303 - Advanced Visual Storytelling (3.0 cr)
• JOUR 4451 - Long-form Video Reporting (3.0 cr)
• JOUR 4452 - Newscast Producing (3.0 cr)
• JOUR 4690 - Special Topics in Journalism Skills (3.0 cr)
• JOUR 4790 - Special Topics in Strategic Communication Skills - Execution (3.0 cr)
• JOUR 4890 - Special Topics in Strategic Communication Skills - Planning (3.0 cr)
• JOUR 5131 - In-Depth Reporting (3.0 cr)
• JOUR 5174 - Magazine Editing and Production (3.0 cr)
• JOUR 5196 - Field Based Practicum (3.0 cr)

Capstone
The capstone requirement is fulfilled by taking JOUR 4995 after 90 credits have been earned. Students who double major within CLA can choose to complete the capstone requirement in their other major and only have to complete 36 credits within the major.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• JOUR 4995 - Capstone (1.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• JOUR 3101W - News Reporting and Writing [WI] (3.0 cr)
• JOUR 3173W - Magazine & Feature Writing [WI] (3.0 cr)
• JOUR 3241W - Advertising Strategy and Creative Development [WI] (3.0 cr)
• JOUR 3279W - Professional Writing for Strategic Communication [WI] (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 5601W - History of Journalism [WI] (3.0 cr)
• JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
Twin Cities Campus

Mass Communication Minor
School of Journalism & Mass Communication
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18

Mass communication is the study of communicating with the masses, but is also about media storytelling with strategy and purpose. The study of mass communication is centered around how messages persuade and affect the behavior and opinion of the person or people receiving the content. This minor is designed for students who wish to pursue a liberal arts approach to the study of mass communication institutions, processes, effects, research methods, and analysis through the lens of economic sociology, politics, psychology, law and other disciplines.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

Students seeking a minor in mass communication must declare through the Hubbard School of Journalism & Mass Communication website at https://hsjmc.umn.edu/undergraduate/majors-minors/minors. There are two qualifications for admission: a GPA of 2.5, and a grade of C or better in JOUR 1001. When these criteria have been met, the department will approve a minor program plan.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
  or JOUR 1001H - Media in a Changing World [SOCS, TS] (3.0 cr)

Minor Requirements
Students may earn a BA or a minor in the Hubbard School of Journalism & Mass Communication, but not both.

Core Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• JOUR 3004 - Information for Mass Communication (3.0 cr)
  or JOUR 3004H - Information for Mass Communication (3.0 cr)

Context Courses
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
3xxx-level
Take 0 or more course(s) from the following:
• JOUR 3005 - Mass Media Effects [SOCS] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 3007 - The Media in American History and Law: Case Studies [HIS] (3.0 cr)
• JOUR 3201 - Principles of Strategic Communication (3.0 cr)
• JOUR 3551 - The Business of Digital Media: Innovation, Disruption, and Adaptation [TS] (3.0 cr)
• JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
• JOUR 3590 - Special Topics in Mass Communication: Context (3.0 cr)
• JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
JOUR 3771 - Media Ethics [CIV] (3.0 cr)
JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
JOUR 3776 - Mass Communication Law (3.0 cr)
  or JOUR 3776H - Mass Communication Law (3.0 cr)
JOUR 3796 - Media and Politics (3.0 cr)
  or POL 3796 - Media and Politics (3.0 cr)

•4xxx and 5xxx-level
  Take 1 or more course(s) from the following:
  •JOUR 4251 - Psychology of Advertising (3.0 cr)
  •JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
  •JOUR 4274W - Advertising in Society [WI] (3.0 cr)
  •JOUR 4590 - Special Topics in Mass Communication: Context (3.0 cr)
  •JOUR 4801 - Global Communication (3.0 cr)
  •JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)
  •JOUR 5541 - Mass Communication and Public Health (3.0 cr)
  •JOUR 5552 - Law of Internet Communication (3.0 cr)
  •JOUR 5601W - History of Journalism [WI] (3.0 cr)
  •JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
  •JOUR 5725 - Management of Media Organizations (3.0 cr)
  •JOUR 5777 - Contemporary Problems in Freedom of Speech and Press (3.0 cr)
  •JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
    or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
**Twin Cities Campus**

**Mathematics B.A.**  
*School of Mathematics*  
*College of Liberal Arts*

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2020  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 42 to 82  
- Degree: Bachelor of Arts

The mission of the program is to provide high-quality mathematics instruction in a stimulating intellectual atmosphere. The goal is to educate students at all levels to provide cultural enrichment, to give them the analytic tools they need to become responsible citizens, and to prepare them for careers involving mathematics.

The School of Mathematics offers a program in the College of Liberal Arts leading to a bachelor of arts degree. The course of study is flexible and may be adapted to satisfy a wide variety of interests and needs. Students may prepare for graduate study in mathematics or may emphasize various fields of interest, such as preparation for secondary school teaching, actuarial science, or programs in applied mathematics. This includes industrial mathematics, biology, mathematics applicable to computer science, and numerical analysis.

**Program Delivery**  
This program is available:  
• via classroom (the majority of instruction is face-to-face)

**Admission Requirements**  
Students must complete 3 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**Required prerequisites**  
**Calculus I & II**  
Take exactly 2 course(s) totaling exactly 8 credit(s) including 2 or more sub-requirements(s) from the following:

- **Calculus I**  
  - MATH 1271 - Calculus I [MATH] (4.0 cr)  
  - or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)  
  - or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

- **Calculus II**  
  - MATH 1272 - Calculus II (4.0 cr)  
  - or MATH 1372 - CSE Calculus II (4.0 cr)  
  - or MATH 1572H - Honors Calculus II (4.0 cr)

**2xxx/3xxxH-Level Calculus Course**  
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:

- **Linear Algebra & Differential Equations**  
  - MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)  
  - or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)  
  - or MATH 2574H - Honors Calculus IV (4.0 cr)

- **Multivariable Calculus**  
  - MATH 2263 - Multivariable Calculus (4.0 cr)  
  - or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)  
  - or MATH 2573H - Honors Calculus III (4.0 cr)

- **Honors Mathematics**  
  - MATH 3592H - Honors Mathematics I (5.0 cr)  
  - or MATH 3593H - Honors Mathematics II (5.0 cr)

**General Requirements**  
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in
which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Mathematics BA is MATH.

STAT 5101 and STAT 5102 are the only courses from different department that may count towards the mathematics BA. The content of STAT 5101 is the same as MATH 5651, and only one of these courses may be taken, not both.

In addition to the specializations described below, students who wish to pursue a pure mathematics track, or are planning to go to graduate school in mathematics, should consult their advisor about appropriate course choices.

Students may earn no more than one undergraduate degree in mathematics: a BA, a BS, or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Remaining 2xxx/3xxxH-Level Calculus Course
Courses that counted towards the Admissions requirement for the mathematics BA may not also count towards this requirement.
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:

**Linear Algebra & Differential Equations**
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2574H - Honors Calculus IV (4.0 cr)

**Multivariable Calculus**
- MATH 2263 - Multivariable Calculus (4.0 cr)
- or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- or MATH 2573H - Honors Calculus III (4.0 cr)

**Honors Mathematics**
- MATH 3593H - Honors Mathematics II (5.0 cr)

Sequences, Series, and Foundations
This course requirement will be waived for students who take MATH 3592H and 3593H.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
- or MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)

Capstone
Students pursuing the BA mathematics major program will develop not only the ability to identify, define, and solve mathematical problems but also the ability to communicate effectively about those problems and solutions. Students should consult with a mathematics advisor prior to beginning the senior year to determine possible topic and possible faculty mentor for the capstone.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the mathematics BA capstone, and they do not need to replace the 1 credit.

**MATH 4995**
A student in MATH 4995 will complete a project on mathematical content that is new to the student and at the level of an upper division MATH course. The project can be a 5-10 page paper or other project such as a computer program or lesson plan, subject to the approval of the instructor.
**MATH 4995 - Senior Project for CLA (1.0 cr)**

**MATH 4997W**
A student in MATH 4997W will complete a paper of at least 10 pages that goes through at least one cycle of revisions.
**MATH 4997W - Senior project (Writing Intensive) [WI] (1.0 cr)**

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4067W - Actuarial Mathematics in Practice [WI] (3.0 cr)
- MATH 4997W - Senior project (Writing Intensive) [WI] (1.0 cr)
Mathematics Options

Mathematics (No Specialization)
Students who do not complete a sub-plan specialization must complete the following mathematics requirements.

The Mathematics BA with no specialization requires a minimum of six 4xxx-level and above mathematics courses (includes STAT 5101 and 5102). This does not include the capstone, and the courses must be chosen from the courses listed in this specialization.

For the Mathematics BA with no specialization, at least 11 upper-division credits in the major must be taken at the UM-TC campus.

Take exactly 6 course(s) from the following:

Algebra
Both courses can be from the theoretical algebra list.

Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

Theoretical Algebra
Take 1 - 2 course(s) totaling 4 - 8 credit(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Further Discrete or Algebraic Math
Take 0 - 1 course(s) totaling 0 - 4 credit(s) from the following:
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5335 - Geometry I (4.0 cr)
• MATH 5345H - Honors: Introduction to Topology (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5505 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)

Analysis Electives
STAT 5102 does not count towards the Analysis requirement.

Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5516H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5552 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5561 - Basic Theory of Probability and Statistics I (4.0 cr)
• MATH 5562 - Prediction and Filtering (4.0 cr)
• MATH 5565 - Basic Theory of Probability and Statistics II (4.0 cr)

Mathematics Electives
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:
• MATH 4065 - Theory of Interest (4.0 cr)
• MATH 4151 - Elementary Set Theory (3.0 cr)
• MATH 4152 - Elementary Mathematical Logic (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 4282 - Mathematical Modeling (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 4653 - Elementary Probability (4.0 cr)
• MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
• MATH 5067 - Actuarial Mathematics I (4.0 cr)
• MATH 5068 - Actuarial Mathematics II (4.0 cr)
• MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
• MATH 5076 - Mathematics of Options, Futures, and Derivative Securities II (4.0 cr)
• MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5166 (Inactive) (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5335 - Geometry I (4.0 cr)
• MATH 5336 (Inactive) (4.0 cr)
• MATH 5345H - Honors: Introduction to Topology (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5536 - Inactive (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

-OR-

Actuarial Science Specialization
Complete the requirements for the actuarial science sub-plan.

-OR-

Mathematics Education Specialization
Complete the requirements for the mathematics education sub-plan.

-OR-

Computer Applications Specialization
Complete the requirements for the computer applications sub-plan.

-OR-

Mathematical Biology: Genomics Specialization
Complete the requirements for the mathematical biology: genomics sub-plan.

-OR-

Mathematical Biology: Physiology Specialization
Complete the requirements for the mathematical biology: physiology sub-plan.

Program Sub-plans
A sub-plan is not required for this program.

Actuarial Science
The mathematics BA with a specialization in actuarial science requires a minimum of seven 4xxx-level and above mathematics courses
(includes STAT 5101 and 5102). This does not include the capstone, and the courses must be chosen from the courses listed in this sub-plan.

Students pursuing the actuarial specialization may want to include MATH 4067W, which fulfills an upper division writing intensive requirement, although it does not fulfill any of the upper division mathematics course requirements. It is recommended that students in this specialization should plan for a summer internship after junior year.

For the mathematics BA with a specialization in actuarial science, at least 22 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

### Algebra

**Theoretical Algebra**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

**Applied Algebra**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 4242 - Applied Linear Algebra (4.0 cr)

### Analysis

**Probability and Statistics**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)

**Stochastic Processes**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

### Actuarial Mathematics

Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
- MATH 5068 - Actuarial Mathematics II (4.0 cr)

### Computer Science

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
  or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

### Introductory Economics and Business

Take exactly 4 course(s) totaling exactly 15 credit(s) from the following:
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)

### Statistics & Insurance or Economics & Insurance

Choose an emphasis in statistics and insurance, or in economics and insurance.

#### Statistics and Insurance

**Statistics**
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- STAT 3032 - Regression and Correlated Data (4.0 cr)
- STAT 5102 - Introduction to Statistical Learning (4.0 cr)

**Insurance**
- Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  - INS 4100 - Corporate Risk Management (2.0 cr)
  - INS 4101 - Employee Benefits (2.0 cr)
  - INS 4200 - Insurance Theory and Practice (2.0 cr)
  or **Economics and Insurance**

**Economics**
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 4261 - Introduction to Econometrics (4.0 cr)

**Insurance**
- Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
  - INS 4100 - Corporate Risk Management (2.0 cr)
Computer Applications
The mathematics BA with a specialization in computer applications requires a minimum of six 4xxx-level and above mathematics courses (includes STAT 5101 and 5102). This does not include the capstone, and the courses must be chosen from the courses listed in this sub-plan.

Students who complete the computer applications specialization also meet requirements for a minor in computer science.

For the mathematics BA with a specialization in computer applications, at least 15 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Algebra
Theoretical Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)

Analysis
STAT 5102 does not count towards the analysis requirement.

Numerical Methods
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)

Analysis Elective
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

or STAT 5101 - Theory of Statistics I (4.0 cr)

Introductory Computer Science
Introduction to Computing and Programming Concepts
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

or Introduction to Computer Programming
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
• CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
  or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)

Discrete Structures
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
  or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
Computing-Related Mathematics

Mathematical Logic
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 5165 - Mathematical Logic I (4.0 cr)

Computer-Related Mathematics Electives
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 5166 (Inactive) (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
- MATH 5705 - Enumerative Combinatorics (4.0 cr)
- MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)
- MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)

Upper-Division Computer Science Electives
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:
- CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
- CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
- CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)
- CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
- CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
- CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
- CSCI 5511 - Artificial Intelligence I (3.0 cr)
- CSCI 5512 - Artificial Intelligence II (3.0 cr)
- CSCI 5521 - Introduction to Machine Learning (3.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
  or CSCI 4041H (Inactive) (4.0 cr)

Mathematics Education
The mathematics BA with a specialization in mathematics education requires a minimum of six 4xxx-level and above mathematics courses (includes STAT 5101 and 5102). This does not include the capstone, and the courses must be chosen from the courses listed in this sub-plan.

These courses prepare students to meet admission requirements for the secondary teaching licensure program in mathematics. The topics covered by these courses include theoretical and applied algebra-combinatorics, probability, mathematical analysis, and geometry.

For the mathematics BA with a specialization in mathematics education, at least 12 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Algebra

Theoretical Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)

Applied Algebra: Combinatorics
Note: MATH 4707 fulfills the applied algebra requirement only for the mathematics education specialization.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
- MATH 5705 - Enumerative Combinatorics (4.0 cr)
- MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)

Geometry
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 5335 - Geometry I (4.0 cr)

Probability and Statistics
MATH 5651/STAT 5101 can count towards the the probability and statistics and the analysis electives requirement.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 4653 - Elementary Probability (4.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)
Analysis Electives

MATH 5651/STAT 5101 can count towards the probability and statistics and the analysis electives requirement. STAT 5102 does not count towards the analysis requirement.

Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 4603 - Advanced Calculus I (4.0 cr)
- MATH 4604 - Advanced Calculus II (4.0 cr)
- MATH 5378 - Differential Geometry (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
- MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5535 - Complex Analysis (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
- MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
- MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
- or STAT 5101 - Theory of Statistics I (4.0 cr)

Mathematics Elective

If a sixth mathematics course is needed after requirements for this specialization have been met, a course this list may be taken. Any course listed below that is not already counting towards another major requirement may count as a mathematics elective.

Take 0 - 1 course(s) totaling 0 - 4 credit(s) from the following:

- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 4151 - Elementary Set Theory (3.0 cr)
- MATH 4152 - Elementary Mathematical Logic (3.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 4603 - Advanced Calculus I (4.0 cr)
- MATH 4604 - Advanced Calculus II (4.0 cr)
- MATH 4653 - Elementary Probability (4.0 cr)
- MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
- MATH 5068 - Actuarial Mathematics II (4.0 cr)
- MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
- MATH 5076 - Mathematics of Options, Futures, and Derivative Securities II (4.0 cr)
- MATH 5165 - Mathematical Logic I (4.0 cr)
- MATH 5166 - Mathematical Logic II (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5336 - Inactive (4.0 cr)
- MATH 5345H - Honors: Introduction to Topology (4.0 cr)
- MATH 5347 - Differential Geometry (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
- MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
- MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
- MATH 5583 - Complex Analysis (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
- MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
- MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumenative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)

Mathematical Biology: Genomics
The mathematics BA with a specialization in mathematical biology: Genomics requires a minimum of six 4xxx-level and above mathematics courses (includes STAT 5101 and 5102). This does not include the capstone, and the courses must be chosen from the courses listed in this sub-plan.

For the mathematics BA with a specialization in mathematical biology: genomics, at least 16 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Mathematical Modeling
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4428 - Mathematical Modeling (4.0 cr)

Algebra
Theoretical Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4242 - Applied Linear Algebra (4.0 cr)

Analysis
STAT 5102 does not count towards the analysis requirement.

Genomics Analysis
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)

Probability and Statistics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)

Biology
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
General Biology
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
  or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Genetics
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• GCD 3022 - Genetics (3.0 cr)

Genomics Elective
If the genomics elective course chosen does not require a chemistry sequence, then it is still recommended that one semester of chemistry is taken (CHEM 1061 & CHEM 1065 Lab) which will also fulfill the physical sciences liberal education degree requirement. Some of these courses many have additional prerequisites.
The 5xxx-level CSCI course which was not taken to fulfill the computer science requirement may (with its prerequisites) be used to fulfill the genomics elective requirement. GCD 4151 has these additional prerequisite courses: CHEM 1061, CHEM 1065 (lab), CHEM 1062, CHEM 1066 (lab), CHEM 2301; BIOC 3021; BIOL 4003.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• EEB 5042 - Quantitative Genetics (3.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)

Computer Science Prerequisites
Option 1: Fulfills prerequisites for CSCI 5461 only
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CSCI 3003
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)

or Option 2: Fulfills prerequisites for CSCI 5461 and 5481
Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:
- CSCI 1103 or 1113
- CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
- or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 1913
- CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
- CSCI 2011/H and 4041/H
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
- or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- or CSCI 4041H - (Inactive)(4.0 cr)

or Option 3: Fulfills prerequisites for CSCI 5461 and 5481
Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:
- CSCI 1133/H
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 1933
- CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
- CSCI 2011/H and 4041/H
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
- or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- or CSCI 4041H - (Inactive)(4.0 cr)

Computer Science
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
- or CSCI 5481 - Computational Techniques for Genomics (3.0 cr)

Mathematics Elective
If MATH 5445 not is chosen as the genomics elective course, then a sixth upper division mathematics course is needed for this specialization. Any course listed below that is not already counting towards another major requirement may count as a mathematics elective.
Take 0 - 1 course(s) totaling 0 - 4 credit(s) from the following:
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 4151 - Elementary Set Theory (3.0 cr)
- MATH 4152 - Elementary Mathematical Logic (3.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 4603 - Advanced Calculus I (4.0 cr)
- MATH 4604 - Advanced Calculus II (4.0 cr)
- MATH 4653 - Elementary Probability (4.0 cr)
- MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
- MATH 5068 - Actuarial Mathematics II (4.0 cr)
- MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
- MATH 5076 - Mathematics of Options, Futures, and Derivative Securities II (4.0 cr)
- MATH 5165 - Mathematical Logic I (4.0 cr)
- MATH 5166 - (Inactive)(4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5335 - Geometry I (4.0 cr)
- MATH 5336 - (Inactive)(4.0 cr)
- MATH 5345H - Honors: Introduction to Topology (4.0 cr)
- MATH 5378 - Differential Geometry (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
- MATH 5485 - Introduction to Numerical Methods I (4.0 cr)

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Information current as of September 02, 2020
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)

Mathematical Biology: Physiology
The mathematics BA with a specialization in mathematical biology: physiology requires a minimum of six 4xxx-level and above mathematics courses (includes STAT 5101 and 5102). This does not include the capstone, and the courses must be chosen from the courses listed in this sub-plan.

For the mathematics BA with a specialization in mathematical biology: physiology, at least 16 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Mathematical Modeling
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4428 - Mathematical Modeling (4.0 cr)

Biological Networks or Neuroscience
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)

Algebra

Theoretical Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 4242 - Applied Linear Algebra (4.0 cr)

Analysis
STAT 5102 does not count towards the analysis requirement.

Physiology Analysis
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)

Probability & Statistics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)

Biology
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

General Biology
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
  or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Physics

Introductory Physics I
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:
• PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Introductory Physics II
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:
• PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
  or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Chemistry
Take exactly 4 course(s) totaling exactly 8 credit(s) from the following:

Chemical Principles I
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  with CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  with CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Chemical Principles II
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  with CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Physiology
Principles of Physiology
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
  • PHSL 3061 - Principles of Physiology (4.0 cr)

Physiology Electives
MATH 5445/5447 may only count if it is not counting towards another sub-plan requirement. Some of these courses may have additional prerequisites. NSC 5202 has the following prerequisites: CHEM 2301, BIOC 3021, NSCI 3101, NSCI 3102.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
  • MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
  • MATH 5447 - Theoretical Neuroscience (4.0 cr)
  • NSC 5202 - Theoretical Neuroscience: Systems and Information Processing (3.0 cr)
  • PHSL 4702 - Cell Physiology (3.0 cr)
  • PHSL 5444 - Muscle (3.0 cr)
Twin Cities Campus
Mathematics Minor
CLA Dean's Office
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 25 to 31

Students complete all the lower division requirements in the mathematics major, plus two upper division electives.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Calculus I & II
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
  - Calculus I
    • MATH 1271 - Calculus I [MATH] (4.0 cr)
    • MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
    • MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  - Calculus II
    • MATH 1272 - Calculus II (4.0 cr)
    • MATH 1372 - CSE Calculus II (4.0 cr)
    • MATH 1572H - Honors Calculus II (4.0 cr)

2xxx/3xxx-H-Level Calculus Course
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:
  - Linear Algebra & Differential Equations
    • MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
    • MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
    • MATH 2574H - Honors Calculus IV (4.0 cr)
  - Multivariable Calculus
    • MATH 2263 - Multivariable Calculus (4.0 cr)
    • MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
    • MATH 2573H - Honors Calculus III (4.0 cr)
  - Honors Mathematics
    • MATH 3592H - Honors Mathematics I (5.0 cr)
    • MATH 3593H - Honors Mathematics II (5.0 cr)

Minor Requirements
Students may earn no more than one undergraduate degree in mathematics: a BA, a BS, or a minor.

Remaining 2xxx/3xxx-H-Level Calculus Course
Courses that counted towards the Admissions requirement for the mathematics BA may not also count towards this requirement.
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:
  - Linear Algebra & Differential Equations
    • MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
    • MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
    • MATH 2574H - Honors Calculus IV (4.0 cr)
  - Multivariable Calculus
    • MATH 2263 - Multivariable Calculus (4.0 cr)
    • MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
    • MATH 2573H - Honors Calculus III (4.0 cr)
  - Honors Mathematics
    • MATH 3592H - Honors Mathematics I (5.0 cr)
    • MATH 3593H - Honors Mathematics II (5.0 cr)
MATH 3592H - Honors Mathematics I (5.0 cr)
or MATH 3593H - Honors Mathematics II (5.0 cr)

Sequences, Series, and Foundations
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
or MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)

Electives
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:
• MATH 4065 - Theory of Interest (4.0 cr)
• MATH 4151 - Elementary Set Theory (3.0 cr)
• MATH 4152 - Elementary Mathematical Logic (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4251 - Elementary Mathematical Logic I (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 4653 - Elementary Probability (4.0 cr)
• MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
• MATH 5067 - Actuarial Mathematics I (4.0 cr)
• MATH 5068 - Actuarial Mathematics II (4.0 cr)
• MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
• MATH 5076 - Mathematics of Options, Futures, and Derivative Securities II (4.0 cr)
• MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5335 - Geometry I (4.0 cr)
• MATH 5345H - Honors: Introduction to Topology (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)
Twin Cities Campus
Medieval Studies Minor
Medieval Studies, Center for
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The medieval studies minor covers the period between 300 and 1500 B.C.E. It includes the history, art history, theater and music history, literature, and languages of the period, including Latin, French, Italian, English, Old English, Scandinavian, and German.

The program allows students with an interest in the medieval period, or who are planning to pursue graduate work in one of the related areas, to concentrate their studies as a coherent whole.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
The minor is administered through the Center for Medieval Studies in the College of Liberal Arts.

Coursework must be upper-division (3xxx-5xxx), chosen from approved course lists in consultation with the director of undergraduate studies. All applicable courses originate in other departments.

Minor Courses
Any MEST 3xxx, 4xxx, 5xxx or its cross-list may count towards this requirement. The following course list is not exhaustive. Students should consult the director of undergraduate studies for final approval on these, and other, course choices.

Take 15 or more credit(s) from the following:

- AMES 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
- ANTH 5442 - Archaeology of the British Isles (3.0 cr)
- ARTH 5324 (Inactive) (3.0 cr)
- ARTH 5765 - Early Chinese Art (3.0 cr)
- ENGL 3026 - Mediterranean Wanderings: Literature and History on the Borders of Three Continents [GP] (3.0 cr)
- FREN 3111 - Medieval Stories (3.0 cr)
- GER 3601 - German Medieval Literature [LITR, GP] (3.0 cr)
- GER 3641 - German Folklore [LITR, GP] (3.0 cr)
- GER 3702 - Beginning Middle High German (3.0 cr)
- GER 5711 - History of the German Language I (3.0 cr)
- GER 5721 - Introduction to Middle High German (3.0 cr)
- GER 5722 - Middle High German: Advanced Readings (3.0 cr)
- GER 5734 - Old Saxon (3.0 cr)
- GER 5740 - Topics in Germanic Medieval Studies (3.0 cr)
- GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
- HIST 3102 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
- HIST 3609 - Military History of Medieval Western Europe (3.0 cr)
- HIST 3616 - France in the Middle Ages (3.0 cr)
- HIST 3618 - The Dark Ages Illumined: Medieval Europe to 1050 (3.0 cr)
- HIST 3621 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
- HIST 3704W - Daily Life in Europe: 1300-1800 [HIS, GP, WI] (3.0 cr)
- HIST 3746 - Game of Thrones: Emperors, Knights and Witches in Central Europe [HIS] (3.0 cr)
- HIST 5111 - Proseminar in the History of Medieval Europe (3.0 cr)
- HIST 5115 - Medieval Latin Historians (3.0 cr)
- HIST 5469 - Historiographies of China, 1000-1700 (3.0 cr)
- HIST 5611 - New Directions in the Middle Ages, ca. 300-1100 (3.0 cr)
• HIST 5612 - New Directions in the Middle Ages, ca. 1100-1500 (3.0 cr)
• HIST 5614 - The Medieval Church (3.0 cr)
• HIST 5900 - Topics in European/Medieval History (1.0 - 4.0 cr)
• HIST 5962 - Bell Library Research Seminar in Comparative World History, ca. 1000-1800 CE (3.0 cr)
• HSCI 3814 - Revolutions in Science: The Babylonians to Renaissance (3.0 cr)
• HMED 3001W - Health, Disease, and Healing (3.0 cr)
• HMED 3509 - Body, Soul, and Spirit in Medieval and Renaissance European Medicine (3.0 cr)
• HSCI 3814 - Revolutions in Science: The Babylonians to Newton (3.0 cr)
• ITAL 4001 (inactive) (4.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
• MEST 3002 - Medieval Tales and their Modern Echoes (3.0 cr)
• MEST 3993 - Directed Studies in Medieval Studies (1.0 - 3.0 cr)
• MUS 3601W - History of Western Music (3.0 cr)
• SCAN 3502 - Scandinavian Myths (3.0 cr)
• SCAN 3503 - Scandinavian Folklore (3.0 cr)
• SCAN 5502 - The Icelandic Saga (3.0 cr)
• SCAN 5701 - Old Norse Language and Literature (3.0 cr)
• SCAN 5703 - Old Norse Poetry (3.0 cr)
• SCAN 5710 (inactive) (3.0 cr)
• SPAN 3503 - Pre-modern Spanish Culture and Thought (3.0 cr)
• SPAN 3703 - Origins and History of Spanish and Portuguese (3.0 cr)
• SPAN 5160 - Medieval Iberian Literatures and Cultures (3.0 cr)
• SPAN 5701 - History of Ibero-Romance (3.0 cr)
• TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
• AFRO 3001 (inactive) (3.0 cr)
• AFRO 3431 - Early Africa and Its Global Connections (3.0 cr)
• ANTH 3027W - Archaeology of Prehistoric Europe (3.0 cr)
• ANTH 3205 - Archaeology of Prehistoric Europe (3.0 cr)
• ANTH 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
• ARCH 3411W - Architectural History to 1750 (3.0 cr)
• ARCH 3411V - Architectural History to 1750 (3.0 cr)
• ARTH 3009 - Medieval Art (3.0 cr)
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• ARTH 3009 - Medieval Art (3.0 cr)
• ARTH 3009 - Medieval Art (3.0 cr)
or RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
HIST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or RELS 3543 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
HIST 3767 - Eastern Orthodoxy: History and Culture (3.0 cr)
or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
• ENGL 3101 - Survey of Medieval English Literature (3.0 cr)
or MEST 3101 - Survey of Medieval English Literature (3.0 cr)
• ENGL 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (3.0 cr)
• ENGL 3110 (Inactive) (3.0 cr)
or ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 4612 - Old English I (3.0 cr)
or MEST 4612 - Old English I (3.0 cr)
• ENGL 4613 - Old English II (3.0 cr)
or MEST 4613 - Old English II (3.0 cr)
• HIST 3081W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
or MEST 3081W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
or RELS 3544W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
• HIST 3101 - Introduction to Medieval History [HIS, GP] (3.0 cr)
or MEST 3001 - Introduction to Medieval History [HIS, GP] (3.0 cr)
• HIST 3271 - The Viking World: Story, History, and Archaeology (3.0 cr)
or MEST 3271 - The Viking World: Story, History, and Archaeology (3.0 cr)
• HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
or MEST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
• HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or MEST 3718W - Christ in Islamic Thought [WI] (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or MEST 3722 - The Ottoman Empire [HIS, GP] (3.0 cr)
• HIST 3611 - Medieval Cities of Europe: 500-1500 [HIS, GP] (3.0 cr)
or MEST 3611 - Medieval Cities of Europe: 500-1500 [HIS, GP] (3.0 cr)
• HIST 3616 - France in the Middle Ages (3.0 cr)
or MEST 3616 - France in the Middle Ages (3.0 cr)
Twin Cities Campus
Music B. Mus.
School of Music
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120 to 125
• Required credits within the major: 78 to 99
• Degree: Bachelor of Music

The B.Mus. in performance is a professional degree in which music courses make up approximately 75 percent of the program.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission to a music program is contingent upon passing an audition. Auditions are highly competitive with students normally having studied for a number of years: a minimum of three-to-four years in voice, guitar, or on an orchestral or band instrument, eight-to-twelve years on piano. Auditions are held during the spring semester prior to fall entrance. Some instruments require a DVD screening round.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students may earn no more than one undergraduate degree from the School of Music: a BA or a B.Mus or a minor. Students may earn more than one major within the B.Mus degree, but may not earn more than one emphasis within the BA degree.

Students are required to complete a sub-plan. Students may complete more than one sub-plan with prior approval from the School of Music. Note that an additional audition may be required.

For students in the Guitar, Harp, and Piano sub-plans, at least 24 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

For students in the Organ, and Voice sub-plans, at least 27 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

For students in the String, Woodwind, Brass, Percussion sub-plan, at least 26 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Music Theory and Ear Training
Take exactly 8 course(s) totaling exactly 12 credit(s) from the following:
• MUS 1501 - Theory and Analysis of Tonal Music I (2.0 cr)
• MUS 1502 - Theory and Analysis of Tonal Music II (2.0 cr)
• MUS 1511 - Ear-Training and Sight-Singing I (1.0 cr)
• MUS 1512 - Ear-Training and Sight-Singing II (1.0 cr)
• MUS 3501 - Theory and Analysis of Tonal Music III (2.0 cr)
• MUS 3511 - Ear-Training and Sight-Singing III (1.0 cr)
• MUS 4504 - Intensive Theory and Analysis of 20th-Century Music (2.0 cr)
• MUS 4514 - Ear-Training and Sight-Singing for 20th-Century Music (1.0 cr)
Music Theory Electives
Note: MUS 5950 must be taken for a minimum of 3 credits in order to count as a music theory elective.
Take exactly 2 course(s) totaling 6 or more credit(s) from the following:
- MUS 3506 - Theory and Analysis of American Popular Music (3.0 cr)
- MUS 4502 - 18th-Century Counterpoint (3.0 cr)
- MUS 4505 - Jazz Theory (3.0 cr)
- MUS 5333 - Post-tonal Theory and Analysis II (3.0 cr)
- MUS 5541 (Inactive) (3.0 cr)
- MUS 5571 - Schenkerian Analysis for Performers (3.0 cr)
- MUS 5573 - Analysis of Late-Romantic Orchestral Literature (3.0 cr)
- MUS 5574 (Inactive) (3.0 cr)
- MUS 5597 - Music and Text (3.0 cr)
- MUS 5950 - Topics in Music (1.0 - 4.0 cr)

Musicology/Ethnomusicology
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
- MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
- MUS 3601W - History of Western Music I [WI] (3.0 cr)
- MUS 3602W - History of Western Music II [WI] (3.0 cr)
- MUS 3603W - History of Western Music III [WI] (3.0 cr)

Conducting
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- MUS 3401 - Basic Conducting (2.0 cr)

Capstone - Recital
The Music B. Mus. capstone has two components: the junior recital and the senior recital. Designed in consultation with the applied teacher, each student plans a full recital for this capstone. This includes selection of repertoire appropriate to the student, and preparing and performing the recital in the School of Music. Students who double major and choose to complete the capstone requirement in their other major are still required to take the Music B. Mus. capstone.
Take exactly 2 course(s) totaling exactly 0 credit(s) from the following:
- MUS 901 - Junior Recital (0.0 cr)
- MUS 951 - Senior Recital (0.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- MUS 3601W - History of Western Music I [WI] (3.0 cr)
- MUS 3602W - History of Western Music II [WI] (3.0 cr)
- MUS 3603W - History of Western Music III [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Classical Guitar
Credit requirements in each course group must be satisfied by taking the courses for multiple semesters. Students may need to take more than six credits of electives to reach the 78-credit requirement for the major.

Keyboard
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
- MUS 1151 - Piano: Class Lessons I (2.0 cr)
- MUS 1152 - Piano: Class Lessons II (2.0 cr)
or Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- MUS 1155 - Keyboard Skills I (2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
- Take 8 or more credit(s) from the following:
  - MUSA 1323 - Guitar: Music Major (2.0 - 4.0 cr)
- Take 8 or more credit(s) from the following:
  - MUSA 2323 - Guitar: Music Major (2.0 - 4.0 cr)
- Take 16 or more credit(s) from the following:
•MUSA 3323 - Guitar: Music Major (2.0 - 4.0 cr)

Ensemble
Take exactly 4 credit(s) from the following:
Take exactly 2 course(s) totaling exactly 2 credit(s) from the following:
•MUS 3230 - Chorus (1.0 - 2.0 cr)
•MUS 5240 - University Singers (1.0 cr)
Take exactly 2 credit(s) from the following:
•MUS 3440 - Chamber Ensemble (1.0 cr)

Literature and Pedagogy
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
•MUS 5461 - Guitar Literature (2.0 cr)
•MUS 5466 - Guitar Pedagogy (2.0 cr)

Electives
Take 2 or more credit(s) from the following:
•MUS 1xxx
•MUS 2xxx
•MUS 3xxx

Harp
Credit requirements in each course group must be satisfied by taking the courses for multiple semesters. Students may need to take more than two credits of electives to reach the 78-credit requirement for the major.

Keyboard
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
•MUS 1151 - Piano: Class Lessons I (2.0 cr)
•MUS 1152 - Piano: Class Lessons II (2.0 cr)
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
•MUS 1155 - Keyboard Skills I (2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
Take 8 or more credit(s) from the following:
•MUSA 1322 - Harp: Music Major (2.0 - 4.0 cr)
•MUSA 2322 - Harp: Music Major (2.0 - 4.0 cr)
Take 16 or more credit(s) from the following:
•MUSA 3322 - Harp: Music Major (2.0 - 4.0 cr)

Ensemble
Take eight semesters of MUS 3420 at one credit per term.
Take 8 or more credit(s) from the following:
•MUS 3420 - Orchestra (1.0 cr)

Electives
Take 2 or more credit(s) from the following:
•MUS 1xxx
•MUS 2xxx
•MUS 3xxx

Organ
Credit requirements in each course group must be satisfied by taking the courses for multiple semesters.

Keyboard
Take exactly 4 course(s) totaling exactly 10 credit(s) from the following:
•MUS 1155 - Keyboard Skills I (2.0 cr)
•MUS 5151 [Inactive](3.0 cr)
•MUS 5152 [Inactive](3.0 cr)
•MUS 5153 [Inactive](2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
Take 8 or more credit(s) from the following:
•MUSA 1303 - Organ: Music Major (2.0 - 4.0 cr)
•MUSA 2303 - Organ: Music Major (2.0 - 4.0 cr)
•MUSA 3303 - Organ: Music Major (2.0 - 4.0 cr)

Ensemble
Take 6 or more course(s) totaling 6 or more credit(s) from the following:
• MUS 3200 - Campus Singers (2.0 cr)
• MUS 3230 - Chorus (1.0 - 2.0 cr)
• MUS 5240 - University Singers (1.0 cr)

Piano
Credit requirements in each course group must be satisfied by taking the courses for multiple semesters. Students may need to take more than two credits of electives in order to reach the 78-credit requirement for the major.

Keyboard
Take exactly 4 course(s) totaling 7 or more credit(s) from the following:
• MUS 1155 - Keyboard Skills I (2.0 cr)
  MUS 5101 - Piano Pedagogy I (2.0 cr)
• MUSA 1402 - Harpsichord: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)
  or MUSA 1403 - Organ: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)
  or MUS 3331 - Jazz Improvisation I (2.0 cr)
  or MUS 3440 - Chamber Ensemble (1.0 cr)
  or MUS 5430 [Inactive] (1.0 cr)
• MUS 5181 - Advanced Piano Literature I (2.0 cr)
  or MUS 5182 - Advanced Piano Literature II (2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
  Take 8 or more credit(s) from the following:
• MUSA 1301 - Piano: Music Major (2.0 - 4.0 cr)
• MUSA 2301 - Piano: Music Major (2.0 - 4.0 cr)
• Take 16 or more credit(s) from the following:
  • MUSA 3301 - Piano: Music Major (2.0 - 4.0 cr)

Ensemble
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
• MUS 3440 - Chamber Ensemble (1.0 cr)
• MUS 5440 - Chamber Ensemble (1.0 cr)

Electives
Take 2 or more credit(s) from the following:
• MUS 1xxx
• MUS 2xxx
• MUS 3xxx

String, Woodwind, Brass, Percussion
Credit requirements in each course group must be satisfied by taking the courses for multiple semesters.

Keyboard
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUS 1151 - Piano: Class Lessons I (2.0 cr)
• MUS 1152 - Piano: Class Lessons II (2.0 cr)
  or Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• MUS 1155 - Keyboard Skills I (2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
  Take 8 or more credit(s) from the following:
• MUSA 1305 - Violin: Music Major (2.0 - 4.0 cr)
• MUSA 1306 - Viola: Music Major (2.0 - 4.0 cr)
• MUSA 1307 - Cello: Music Major (2.0 - 4.0 cr)
• MUSA 1308 - Double Bass: Music Major (2.0 - 4.0 cr)
• MUSA 1309 - Flute: Music Major (2.0 - 4.0 cr)
• MUSA 1311 - Oboe: Music Major (2.0 - 4.0 cr)
• MUSA 1312 - Clarinet: Music Major (2.0 - 4.0 cr)
• MUSA 1313 - Saxophone: Music Major (2.0 - 4.0 cr)
• MUSA 1314 - Bassoon: Music Major (2.0 - 4.0 cr)
• MUSA 1315 - French Horn: Music Major (2.0 - 4.0 cr)
• MUSA 1316 - Trumpet: Music Major (2.0 - 4.0 cr)
• MUSA 1317 - Trombone: Music Major (2.0 - 4.0 cr)
• MUSA 1318 - Euphonium: Music Major (2.0 - 4.0 cr)
• MUSA 1319 - Tuba: Music Major (2.0 - 4.0 cr)
• MUSA 1321 - Percussion: Music Major (2.0 - 4.0 cr)
  • Take 8 or more credit(s) from the following:
• MUSA 2305 - Violin: Music Major (2.0 - 4.0 cr)
• MUSA 2306 - Viola: Music Major (2.0 - 4.0 cr)
• MUSA 2307 - Cello: Music Major (2.0 - 4.0 cr)
• MUSA 2308 - Double Bass: Music Major (2.0 - 4.0 cr)
• MUSA 2311 - Oboe: Music Major (2.0 - 4.0 cr)
• MUSA 2312 - Clarinet: Music Major (2.0 - 4.0 cr)
• MUSA 2313 - Saxophone: Music Major (2.0 - 4.0 cr)
• MUSA 2314 - Bassoon: Music Major (2.0 - 4.0 cr)
• MUSA 2315 - French Horn: Music Major (2.0 - 4.0 cr)
• MUSA 2316 - Trumpet: Music Major (2.0 - 4.0 cr)
• MUSA 2317 - Trombone: Music Major (2.0 - 4.0 cr)
• MUSA 2318 - Euphonium: Music Major (2.0 - 4.0 cr)
• MUSA 2319 - Tuba: Music Major (2.0 - 4.0 cr)
• MUSA 2321 - Percussion: Music Major (2.0 - 4.0 cr)
  • Take 16 or more credit(s) from the following:
    • MUSA 3305 - Violin: Music Major (2.0 - 4.0 cr)
    • MUSA 3306 - Viola: Music Major (2.0 - 4.0 cr)
    • MUSA 3307 - Cello: Music Major (2.0 - 4.0 cr)
    • MUSA 3308 - Double Bass: Music Major (2.0 - 4.0 cr)
    • MUSA 3311 - Oboe: Music Major (2.0 - 4.0 cr)
    • MUSA 3312 - Clarinet: Music Major (2.0 - 4.0 cr)
    • MUSA 3313 - Saxophone: Music Major (2.0 - 4.0 cr)
    • MUSA 3314 - Bassoon: Music Major (2.0 - 4.0 cr)
    • MUSA 3315 - French Horn: Music Major (2.0 - 4.0 cr)
    • MUSA 3316 - Trumpet: Music Major (2.0 - 4.0 cr)
    • MUSA 3317 - Trombone: Music Major (2.0 - 4.0 cr)
    • MUSA 3318 - Euphonium: Music Major (2.0 - 4.0 cr)
    • MUSA 3319 - Tuba: Music Major (2.0 - 4.0 cr)
    • MUSA 3321 - Percussion: Music Major (2.0 - 4.0 cr)

Band or Orchestra
Take eight semesters of MUS 3410 and/or MUS 3420 at one credit per term.
Take exactly 8 credit(s) from the following:
  • MUS 3410 - University Wind Bands (1.0 cr)
  • MUS 3420 - Orchestra (1.0 cr)

Chamber Ensemble
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
  • MUS 3340 - Jazz Ensemble (1.0 cr)
  • MUS 3350 - Jazz Combo (1.0 cr)
  • MUS 3440 - Chamber Ensemble (1.0 cr)
  • MUS 5440 - Chamber Ensemble (1.0 cr)
  • MUS 5480 [Inactive] (1.0 cr)
  • MUS 5490 - Percussion Ensemble (1.0 cr)

Voice
Credit requirements in each course group must be satisfied by taking the courses for multiple semesters.

Keyboard
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
  • MUS 1151 - Piano: Class Lessons I (2.0 cr)
  • MUS 1152 - Piano: Class Lessons II (2.0 cr)
or Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  • MUS 1155 - Keyboard Skills I (2.0 cr)

Ensemble
Take one course each semester. No more than two semesters of MUS 5250 & 5280 may count.
Take 8 or more course(s) totaling 8 - 10 credit(s) from the following:
  Take 6 - 8 course(s) totaling 6 - 8 credit(s) from the following:
    • MUS 3230 - Chorus (1.0 - 2.0 cr)
    • MUS 5240 - University Singers (1.0 cr)
  • Take 0 - 2 course(s) totaling 0 - 4 credit(s) from the following:
    • MUS 5250 - Opera Workshop and Ensemble (2.0 cr)
    • MUS 5280 - Opera Theatre (2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
Take 8 or more credit(s) from the following:
  • MUSA 1304 - Voice: Music Major (2.0 - 4.0 cr)
• Take 8 or more credit(s) from the following:
  • MUSA 2304 - Voice: Music Major (2.0 - 4.0 cr)
• Take 16 or more credit(s) from the following:
  • MUSA 3304 - Voice: Music Major (2.0 - 4.0 cr)

**Diction and Vocal Literature**
Take exactly 6 course(s) totaling exactly 6 credit(s) from the following:
  • MUS 3241 - Vocal Literature (German Lieder) and Pedagogy (1.0 cr)
  • MUS 3242 - Vocal Literature (French Melodie) and Pedagogy (1.0 cr)
  • MUS 3261 - Italian Diction for Singers (1.0 cr)
  • MUS 3262 - English Diction for Singers (1.0 cr)
  • MUS 3263 - German Diction for Singers (1.0 cr)
  • MUS 3264 - French Diction for Singers (1.0 cr)

**Language**
Take exactly 3 course(s) totaling exactly 15 credit(s) from the following:
  • FREN 1001 - Beginning French I (5.0 cr)
  • GER 1001 - Beginning German (5.0 cr)
  • ITAL 1001 - Beginning Italian I (5.0 cr)
Twin Cities Campus
Music B.A.
School of Music
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 to 50
- Degree: Bachelor of Arts

The BA program is for students who wish to major in music within a broad liberal arts degree program.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students who pursue the music BA choose to specialize in one of two sub-plans: academic emphasis or applied emphasis. The academic emphasis does not require an entrance audition to the School of Music. Admission to the applied emphasis is contingent upon passing an audition. Auditions are competitive with students normally having studied privately for a number of years on the primary instrument. Auditions are held during the spring semester prior to entrance in the fall semester. Some instruments require a DVD screening round. Please visit the School of Music website for more information about each emphasis.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Music BA is MUS.

For students in the Academic Emphasis sub-plan, at least 12 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

For students in the Applied Emphasis sub-plan, at least 13 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree from the School of Music: a BA or a B.Mus or a minor. Students may earn more than one major within the B.Mus degree, but may not earn more than one emphasis within the BA degree.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Music Theory and Ear Training
Take exactly 6 course(s) totaling exactly 9 credit(s) from the following:
- MUS 1501 - Theory and Analysis of Tonal Music I (2.0 cr)
- MUS 1502 - Theory and Analysis of Tonal Music II (2.0 cr)
- MUS 1511 - Ear-Training and Sight-Singing I (1.0 cr)
- MUS 1512 - Ear-Training and Sight-Singing II (1.0 cr)
- MUS 3501 - Theory and Analysis of Tonal Music III (2.0 cr)
- MUS 3511 - Ear-Training and Sight-Singing III (1.0 cr)
Music History
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Keyboard
For non-keyboard majors, MUS 1155 may be substituted for MUS 1151-1152. Keyboard majors must consult departmental advisor for appropriate course series.
Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:
  Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
  • MUS 1151 - Piano: Class Lessons I (2.0 cr)
  • MUS 1152 - Piano: Class Lessons II (2.0 cr)
or
  Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  • MUS 1155 - Keyboard Skills I (2.0 cr)

Capstone
The Music BA Capstone is a directed study done under the supervision of a SOM faculty member (usually the BA faculty advisor). Depending on the students chosen elective emphasis and career goals, the capstone may take various forms, including a recital, lecture recital, research paper, composition, or another appropriate medium. Project topics can include performance, musicology, music theory, composition, creative studies and media, or pedagogy, among others.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Music BA capstone, but they do need to replace the 1 credit with another music elective.
• MUS 3995 - Major Project (1.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Academic Emphasis

Additional Music Theory and Ear Training
Take exactly 2 course(s) totaling exactly 3 credit(s) from the following:
• MUS 4504 - Intensive Theory and Analysis of 20th-Century Music (2.0 cr)
• MUS 4514 - Ear-Training and Sight-Singing for 20th-Century Music (1.0 cr)

Ethnomusicology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
  or
• MUS 1804 - World Music [AH, GP] (3.0 cr)

Performance
Take a minimum of one 'Performance' credit by enrolling in a School of Music ensemble course, or a private- or group-lesson instruction course (beyond the 'Keyboard' requirement), or a composition course.
Take exactly 1 course(s) totaling 1 - 2 credit(s) from the following:
• MUS 3200 - Campus Singers (2.0 cr)
• MUS 3230 - Chorus (1.0 - 2.0 cr)
• MUS 3400 - University and Campus Bands (2.0 cr)
• MUS 3410 - University Wind Bands (1.0 cr)
• MUS 3420 - Orchestra (1.0 cr)
• MUS 3430 - Campus Orchestra (2.0 cr)

Electives in Music
Take two courses in music theory, musicology, ethnomusicology, or creative studies and media. Note: MUS 5950 must be taken for a minimum of 3 credits and it must be pre-approved by the departmental advisor in order to fulfill electives in music requirement.
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

Music Theory Electives
Take 0 or more course(s) from the following:
• MUS 3506 - Theory and Analysis of American Popular Music (3.0 cr)
• MUS 4502 - 18th-Century Counterpoint (3.0 cr)
• MUS 4505 - Jazz Theory (3.0 cr)
• MUS 5333 - Post-tonal Theory and Analysis II (3.0 cr)
• MUS 5541 [Inactive](3.0 cr)
• MUS 5571 - Schenkerian Analysis for Performers (3.0 cr)
• MUS 5573 - Analysis of Late-Romantic Orchestral Literature (3.0 cr)
• MUS 5574 [Inactive](3.0 cr)
• MUS 5597 - Music and Text (3.0 cr)

Musicology
Take 0 or more course(s) from the following:
• MUS 5620 - Topics in Opera History (3.0 cr)
• MUS 5624 - Music of J. S. Bach (3.0 cr)
• MUS 5647 - 20th-Century European/American Music (3.0 cr)
• MUS 5950 - Topics in Music (1.0 - 4.0 cr)

Creative Studies and Media
Take 0 or more course(s) from the following:
• MUS 3331 - Jazz Improvisation I (2.0 cr)
• MUS 3950 - Topics in Music (1.0 - 3.0 cr)
• MUS 5550 - Class Composition for Performers (3.0 cr)
• MUS 5561 - Orchestration I (3.0 cr)
• MUS 5591 - Introduction to Music Information Technology (3.0 cr)
• MUS 5592 - Music Informatics Seminar (3.0 cr)
• MUS 5701 - Music, Disability, and Society (3.0 cr)
• MUS 5731 - Jazz and Modernism (3.0 cr)
• MUS 5336 - Jazz Arranging (3.0 cr)

Applied Emphasis
Ethnomusicology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI (3.0 cr)

Applied Lessons
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• USA 12xx (2.0 cr)
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• USA 22xx (2.0 cr)

Ensembles/Chamber Music
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
• MUS 3200 - Campus Singers (2.0 cr)
• MUS 3230 - Chorus (1.0 - 2.0 cr)
• MUS 3340 - Jazz Ensemble (1.0 cr)
• MUS 3350 - Jazz Combo (1.0 cr)
• MUS 3400 - University and Campus Bands (2.0 cr)
• MUS 3410 - University Wind Bands (1.0 cr)
• MUS 3420 - Orchestra (1.0 cr)
• MUS 3430 - Campus Orchestra (2.0 cr)
• MUS 3440 - Chamber Ensemble (1.0 cr)
• MUS 5430 [Inactive](1.0 cr)
• MUS 5440 - Chamber Ensemble (1.0 cr)
• MUS 5460 - World Music Ensemble (1.0 - 2.0 cr)
• MUS 5480 [Inactive](1.0 cr)
• MUS 5490 - Percussion Ensemble (1.0 cr)

Electives in Music
Electives are chosen in consultation with the departmental advisor. Courses that have already counted towards a different requirement may not also fulfill the electives in music requirement.
Take 12 or more credit(s) from the following:

MUS Electives
The following courses may not count towards this course group: MUS 3021, MUS 3029, MUS 3045, or any ensemble course.
Take 9 - 12 credit(s) from the following:
• MUS 3xxx
• MUS 4xxx
• MUS 5xxx
Take at most 3 credit(s) from the following:
• MUS 1xxx
Take at most 3 credit(s) from the following:
Twin Cities Campus
Music Education B. Mus
School of Music
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 127 to 129
• Required credits within the major: 98 to 111
• Degree: Bachelor of Music

The degree in music education is offered with two concentrations: instrumental/general music K-12 and choral/general. The instrumental/general concentration requires that a student be admitted via audition on an orchestral or band instrument; the choral/general concentration requires that a student be admitted in voice, piano, or organ. Completion of the degree in music education culminates in eligibility for state licensure in the concentration area.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission to a music program is contingent upon passing an audition. Auditions are highly competitive with students normally having studied for a number of years: a minimum of three to four years in voice, guitar, or on an orchestral or band instrument, eight to twelve years on piano. Auditions are held throughout the academic year. Incoming freshmen normally take the audition during the winter of their senior year of high school; transfer students one semester prior to the term in which they plan to enroll. Students applying for the program in music education are also required to pass an interview with the music education faculty.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students may earn no more than one undergraduate degree from the School of Music: a BA or a B.Mus or a minor. Students may earn more than one major within the B.Mus degree, but may not earn more than one emphasis within the BA degree.

For students who declare the Instrumental/General Music sub-plan, at least 39 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. For students who declare the Choral/General Music sub-plan, at least 37 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Major Courses
Take exactly 4 course(s) totaling exactly 10 credit(s) from the following:
• MUED 1201 - Introduction to Music Education (2.0 cr)
• MUED 5101 - Improvisation and Creativity in the Music Classroom (2.0 cr)
• MUED 5301 - General Music I (3.0 cr)
• MUED 5302 - General Music II (3.0 cr)

Music Theory and Ear Training
Take exactly 8 course(s) totaling exactly 12 credit(s) from the following:
• MUS 1501 - Theory and Analysis of Tonal Music I (2.0 cr)
• MUS 1502 - Theory and Analysis of Tonal Music II (2.0 cr)
• MUS 1511 - Ear-Training and Sight-Singing I (1.0 cr)
• MUS 1512 - Ear-Training and Sight-Singing II (1.0 cr)
• MUS 3501 - Theory and Analysis of Tonal Music III (2.0 cr)
• MUS 3511 - Ear-Training and Sight-Singing III (1.0 cr)
• MUS 4504 - Intensive Theory and Analysis of 20th-Century Music (2.0 cr)
• MUS 4514 - Ear-Training and Sight-Singing for 20th-Century Music (1.0 cr)

Musicology/Ethnomusicology
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Musicology/Ethnomusicology
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Piano
For non-piano majors, MUS 1155 may be substituted for MUS 1151-1152. Piano majors must consult departmental advisor for appropriate course series.
Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:
  Piano Majors
  Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
  • MUS 1151 - Piano: Class Lessons I (2.0 cr)
  • MUS 1152 - Piano: Class Lessons II (2.0 cr)
  or Non-Piano Majors
  Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  • MUS 1155 - Keyboard Skills I (2.0 cr)

Professional Education
CI 5452 must be taken for 2 credits.
Take exactly 8 course(s) totaling exactly 11 credit(s) from the following:
• CI 4602 - English Learners and Academic Language (1.0 cr)
• CI 5163 - Child and Adolescent Development for Teaching and Learning I (1.0 cr)
• CI 5164 - Child and Adolescent Development for Teaching and Learning II (2.0 cr)
• EPSY 4001 - Teaching Students with Special Needs in Inclusive Settings (1.0 cr)
• OLPD 5005 - School and Society (2.0 cr)
• OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
• PUBH 3005 (Inactive) (1.0 cr)
  Take 2 or more credit(s) from the following:
  • CI 5452 - Reading in the Content Areas for Initial Licensure Candidates (1.0 - 2.0 cr)

Senior Recital
The senior recital is typically taken in the fall of the fourth year.
Take exactly 1 course(s) totaling exactly 0 credit(s) from the following:
• MUS 951 - Senior Recital (0.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Instrumental/General Music Education
Students successfully completing the program will meet licensure requirements to teach band, orchestra, and general classroom music in grades K-12 in Minnesota.

Core Instrumental/General Music Courses
Take exactly 7 course(s) totaling exactly 16 credit(s) from the following:
MUED 4502 - String Techniques and Teaching (2.0 cr)
MUED 4503 - Woodwind Techniques and Teaching (2.0 cr)
MUED 4504 - Brass Techniques and Teaching (2.0 cr)
MUED 4505 - Percussion Techniques and Teaching (2.0 cr)
MUED 5516 - Instrumental Methods and Materials I (3.0 cr)
MUED 5517 - Instrumental Methods and Materials II (3.0 cr)
MUED 5519 - Advanced Conducting and Repertoire (Instrumental) (2.0 cr)

Applied Music
Take exactly 8 course(s) totaling exactly 16 credit(s) from the following:

Applied Voice
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• MUS 1260 - Voice Class (2.0 cr)
• MUSA 1404 - Voice: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)

• MUSA 12xx
Take two semesters at 2 credits per term of MUSA 12xx courses.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUSA 1205 - Violin: Music Education and BA (2.0 cr)
• MUSA 1206 - Viola: Music Education and BA (2.0 cr)
• MUSA 1207 - Cello: Music Education and BA (2.0 cr)
• MUSA 1209 - Flute: Music Education and BA (2.0 cr)
• MUSA 1211 - Oboe: Music Education and BA (2.0 cr)
• MUSA 1212 - Clarinet: Music Education and BA (2.0 cr)
• MUSA 1213 - Saxophone: Music Ed and BA (2.0 cr)
• MUSA 1214 - Bassoon: Music Education and BA (2.0 cr)
• MUSA 1215 - French Horn: Music Education and BA (2.0 cr)
• MUSA 1216 - Trumpet: Music Education and BA (2.0 cr)
• MUSA 1217 - Trombone: Music Education and BA (2.0 cr)
• MUSA 1219 - Tuba: Music Education and BA (2.0 cr)
• MUSA 1221 - Percussion: Music Ed and BA (2.0 cr)
• MUSA 1222 - Harp: Music Education and BA (2.0 cr)

• MUSA 22xx
Take two semesters at 2 credits per term of 22xx courses.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUSA 2205 - Violin: Music Education and BA (2.0 cr)
• MUSA 2206 - Viola: Music Education and BA (2.0 cr)
• MUSA 2207 - Cello: Music Education and BA (2.0 cr)
• MUSA 2208 - Bass: Music Education and BA (2.0 cr)
• MUSA 2209 - Flute: Music Education and BA (2.0 cr)
• MUSA 2211 - Oboe: Music Education and BA (2.0 cr)
• MUSA 2212 - Clarinet: Music Education and BA (2.0 cr)
• MUSA 2213 - Saxophone: Music Education and BA (2.0 cr)
• MUSA 2214 - Bassoon: Music Education and BA (2.0 cr)
• MUSA 2215 - French Horn: Music Education and BA (2.0 cr)
• MUSA 2216 - Trumpet: Music Education and BA (2.0 cr)
• MUSA 2217 - Trombone: Music Education and BA (2.0 cr)
• MUSA 2219 - Tuba: Music Education and BA (2.0 cr)
• MUSA 2221 - Percussion: Music Education and BA (2.0 cr)
• MUSA 2222 - Harp: Music Education and BA (2.0 cr)

• MUSA 32xx
Take three semesters at 2 credits per term of 32xx courses.
Take exactly 3 course(s) totaling exactly 6 credit(s) from the following:
• MUSA 3205 - Violin: Music Education and BA (2.0 cr)
• MUSA 3206 - Viola: Music Education and BA (2.0 cr)
• MUSA 3207 - Cello: Music Education and BA (2.0 cr)
• MUSA 3209 - Flute: Music Education and BA (2.0 cr)
• MUSA 3211 - Oboe: Music Education and BA (2.0 cr)
• MUSA 3212 - Clarinet: Music Education and BA (2.0 cr)
• MUSA 3213 - Saxophone: Music Education and BA (2.0 cr)
• MUSA 3214 - Bassoon: Music Education and BA (2.0 cr)
• MUSA 3215 - French Horn: Music Education and BA (2.0 cr)
• MUSA 3216 - Trumpet: Music Education and BA (2.0 cr)
• MUSA 3217 - Trombone: Music Education and BA (2.0 cr)
• MUSA 3219 - Tuba: Music Education and BA (2.0 cr)
• MUSA 3221 - Percussion: Music Education and BA (2.0 cr)
• MUSA 3222 - Harp: Music Education and BA (2.0 cr)
Ensemble Requirement

Band or Orchestra
MUS 3410 or MUS 3420 is required for a minimum of six semesters (1 credit each semester), selected in consultation with a departmental advisor.
Take exactly 6 credit(s) from the following:
- MUS 3410 - University Wind Bands (1.0 cr)
- MUS 3420 - Orchestra (1.0 cr)

Ensemble
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- MUS 3340 - Jazz Ensemble (1.0 cr)
- MUS 3350 - Jazz Combo (1.0 cr)
- MUS 3440 - Chamber Ensemble (1.0 cr)
- MUS 5480 - [Inactive] (1.0 cr)
- MUS 5490 - Percussion Ensemble (1.0 cr)

Take exactly 12 credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major are still required to take the Music Education B.Mus capstone.
- Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  - MUED 5650 - Student Teaching Seminar (2.0 cr)
- Take exactly 10 credit(s) from the following:
  - MUED 5350 - Student Teaching in Classroom Music (4.0 - 8.0 cr)
  - MUED 5550 - Student Teaching in Instrumental Music (4.0 - 8.0 cr)

Choral/General Music Education
This program is for students majoring in voice, piano, organ, or classical guitar who want to teach choral and classroom music in the elementary and secondary schools. Students successfully completing the program will meet licensure requirements to teach choral and general classroom music in grades K-12 in Minnesota.

Core Choral/General Music Courses
Take exactly 5 course(s) totaling exactly 12 credit(s) from the following:
- MUED 4417 - Style, Pedagogy, and Diction in the Choral Music Classroom I (2.0 cr)
- MUED 4418 - Style, Pedagogy, and Diction in the Choral Music Classroom II (2.0 cr)
- MUED 5415 - Choral/Vocal Methods and Materials I (3.0 cr)
- MUED 5416 - Choral/Vocal Methods and Materials II (3.0 cr)
- MUED 5419 - Advanced Conducting and Repertoire (Choral) (2.0 cr)

Ensemble Requirement
MUS 3230 or MUS 5240 is required for a minimum of seven semesters (1 credit each semester), selected in consultation with a departmental advisor.
Take 7 or more credit(s) from the following:
- MUS 3230 - Chorus (1.0 - 2.0 cr)
- MUS 5240 - University Singers (1.0 cr)

Capstone
Student Teaching is the capstone experience for those majoring in Music Education. Music education majors spend a minimum of 16 weeks in two school settings in accordance with their focus. During student teaching, teacher candidates are placed full-time in schools, doing those things that their licensed counterparts do, including planning, instructing, and assessing music classes and students in grades K-12.
Take exactly 12 credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major are still required to take the Music Education B.Mus capstone.
- Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  - MUED 5650 - Student Teaching Seminar (2.0 cr)
- Take exactly 10 credit(s) from the following:
  - MUED 5350 - Student Teaching in Classroom Music (4.0 - 8.0 cr)
  - MUED 5450 - Student Teaching in Vocal Music (4.0 - 8.0 cr)

Instrument Focus

Voice
Students must complete two semesters at two credits per term of MUSA 1204; two semesters at 2 credits per term of MUSA 2204; and three semesters at two credits per term of MUSA 3204. Additionally, students must complete 4 credits of MUSA 1401.
Applied Voice
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 1204 - Voice: Music Education and BA (2.0 cr)
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 2204 - Voice: Music Education and BA (2.0 cr)
Take 3 or more course(s) totaling 6 or more credit(s) from the following:
• MUSA 3204 - Voice: Music Education and BA (2.0 cr)

Applied Piano
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 1201 - Piano: Music Education and BA (2.0 cr)
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 2201 - Piano: Music Ed and BA (2.0 cr)
Take 3 or more course(s) totaling 6 or more credit(s) from the following:
• MUSA 3201 - Piano: Music Ed and BA (2.0 cr)

Applied Voice
Take 4 or more credit(s) from the following:
• MUSA 1404 - Voice: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)

-OR-

Piano
Students must complete two semesters at two credits per term of MUSA 1201; two semesters at two credits per term of MUSA 2201; and three semesters at two credits per term of MUSA 3201. Additionally, students must complete 4 credits of MUSA 1404.

Applied Piano
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 1201 - Piano: Music Education and BA (2.0 cr)
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 2201 - Piano: Music Ed and BA (2.0 cr)
Take 3 or more course(s) totaling 6 or more credit(s) from the following:
• MUSA 3201 - Piano: Music Ed and BA (2.0 cr)

Applied Voice
Take 4 or more credit(s) from the following:
• MUSA 1404 - Voice: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)
Twin Cities Campus
Music Minor
School of Music
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20 to 24

The minor in music allows students to dive into the theory, application, and practice of music alongside other students pursuing all kinds of majors across the University. Undergraduate students from any college or department at the University of Minnesota may deepen their knowledge of music through this minor, creating a vibrant and diverse cohort of students practicing and learning together.

Program Advising
Due the nuances unique to the discipline and study of music, students must work in close consultation on a semesterly basis with the department advisor to ensure adequate and timely degree progress. Music programs involve careful sequencing of core courses and applied music study to progressively build musical competencies and techniques. Introductory courses support not only the key concepts needed for success in the next course in the sequence but also the adjacent core course sequences as well. For example, the music history sequence is highly dependent on the concepts addressed in the accompanying courses in music theory, ear-training, sight-singing, and keyboarding.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission to the applied music minor is contingent upon passing an audition. Auditions are competitive with students normally having studied privately for a number of years on the primary instrument. Auditions are held in the spring for fall semester entrance, and in the fall for spring semester entrance. Some instruments require a pre-screening video round. Please visit the School of Music website for more information about auditions.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Students may earn a major or a minor in music, but not both.

Music Theory and Ear Training
Take exactly 4 course(s) totaling exactly 6 credit(s) from the following:
• MUS 1501 - Theory and Analysis of Tonal Music I (2.0 cr)
• MUS 1502 - Theory and Analysis of Tonal Music II (2.0 cr)
• MUS 1511 - Ear-Training and Sight-Singing I (1.0 cr)
• MUS 1512 - Ear-Training and Sight-Singing II (1.0 cr)

Musicology/Ethnomusicology
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Keyboard
Keyboard minors take MUS 1155. Non-keyboard minors may substitute MUS 1155 for MUS 1151 and MUS 1152.
Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:
• MUS 1155 - Keyboard Skills I (2.0 cr)
or Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUS 1151 - Piano: Class Lessons I (2.0 cr)
• MUS 1152 - Piano: Class Lessons II (2.0 cr)
Applied Music
Take 2 courses for 2 credits each, over 2 semesters.
Take 4 or more credit(s) from the following:
• MUSA 1301 - Piano: Music Major (2.0 - 4.0 cr)
• MUSA 1302 - Harpsichord: Music Major (2.0 - 4.0 cr)
• MUSA 1303 - Organ: Music Major (2.0 - 4.0 cr)
• MUSA 1304 - Voice: Music Major (2.0 - 4.0 cr)
• MUSA 1305 - Violin: Music Major (2.0 - 4.0 cr)
• MUSA 1306 - Viola: Music Major (2.0 - 4.0 cr)
• MUSA 1307 - Cello: Music Major (2.0 - 4.0 cr)
• MUSA 1308 - Double Bass: Music Major (2.0 - 4.0 cr)
• MUSA 1309 - Flute: Music Major (2.0 - 4.0 cr)
• MUSA 1311 - Oboe: Music Major (2.0 - 4.0 cr)
• MUSA 1312 - Clarinet: Music Major (2.0 - 4.0 cr)
• MUSA 1313 - Saxophone: Music Major (2.0 - 4.0 cr)
• MUSA 1314 - Bassoon: Music Major (2.0 - 4.0 cr)
• MUSA 1315 - French Horn: Music Major (2.0 - 4.0 cr)
• MUSA 1316 - Trumpet: Music Major (2.0 - 4.0 cr)
• MUSA 1317 - Trombone: Music Major (2.0 - 4.0 cr)
• MUSA 1318 - Euphonium: Music Major (2.0 - 4.0 cr)
• MUSA 1319 - Tuba: Music Major (2.0 - 4.0 cr)
• MUSA 1321 - Percussion: Music Major (2.0 - 4.0 cr)
• MUSA 1322 - Harp: Music Major (2.0 - 4.0 cr)
• MUSA 1323 - Guitar: Music Major (2.0 - 4.0 cr)

Ensembles
Take 2 or more course(s) totaling 2 - 4 credit(s) from the following:
• MUS 3230 - Chorus (1.0 - 2.0 cr)
• MUS 3410 - University Wind Bands (1.0 cr)
• MUS 3420 - Orchestra (1.0 cr)
• MUS 3440 - Chamber Ensemble (1.0 cr)
• MUS 5240 - University Singers (1.0 cr)
• MUS 5280 - Opera Theatre (2.0 cr)
Twin Cities Campus
Music Therapy B. Mus.
School of Music
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 92 to 107
- Degree: Bachelor of Music

This program prepares students for a profession in music therapy, using music to influence behavioral changes in people, from preschool through geriatrics, in a variety of educational and health-related environments. Completion of this degree program leads to eligibility for the Board Certification exam. Successful completion of the exam leads to the MT-BC credential (Music Therapist - Board Certified).

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission to a music program is contingent upon passing an audition. Auditions are highly competitive with students normally having studied for a number of years—minimum of three to four years in voice, guitar, or on an orchestral or band instrument, eight to twelve years on piano. Auditions are held throughout the academic year. Incoming freshmen normally take the audition during the winter of their senior year of high school; transfer students one semester prior to the term in which they plan to enroll. Students applying for the program in music therapy are required to pass an interview with music education/therapy faculty.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students may earn no more than one undergraduate degree from the School of Music: a BA or a B.Mus or a minor. Students may earn more than one major within the B.Mus degree, but may not earn more than one emphasis within the BA degree.

At least 31 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Music Therapy Courses
Take exactly 8 course(s) totaling exactly 26 credit(s) from the following:
- MUED 1801 - Introduction to Music Therapy (2.0 cr)
- MUED 5800 - Group Music Leadership Skills (3.0 cr)
- MUED 5804 - Music Therapy Methods and Procedures I (4.0 cr)
- MUED 5805 - Music Therapy Methods and Procedures II (4.0 cr)
- MUED 5806 - Career Preparation (4.0 cr)
- MUED 5669 - Psychology of Music (3.0 cr)
- MUED 3807 - Percussion Techniques for Music Therapists (2.0 cr)
- MUED 5803 - Therapeutic Management in Music Settings (4.0 cr)

Music Theory and Ear Training
Take exactly 8 course(s) totaling exactly 12 credit(s) from the following:
- MUS 1501 - Theory and Analysis of Tonal Music I (2.0 cr)
- MUS 1502 - Theory and Analysis of Tonal Music II (2.0 cr)
- MUS 1511 - Ear-Training and Sight-Singing I (1.0 cr)
• MUS 1512 - Ear-Training and Sight-Singing II (1.0 cr)
• MUS 3501 - Theory and Analysis of Tonal Music III (2.0 cr)
• MUS 3511 - Ear-Training and Sight-Singing III (1.0 cr)
• MUS 4504 - Intensive Theory and Analysis of 20th-Century Music (2.0 cr)
• MUS 4514 - Ear-Training and Sight-Singing for 20th-Century Music (1.0 cr)

Musicology/Ethnomusicology
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)

Keyboard
Non-keyboard majors with advanced keyboard skills may substitute MUS 1155 for MUS 1151 & 1152, subject to departmental approval. Keyboard majors must take MUS 1155.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUS 1151 - Piano: Class Lessons I (2.0 cr)
• MUS 1152 - Piano: Class Lessons II (2.0 cr)
or Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• MUS 1155 - Keyboard Skills I (2.0 cr)

Guitar
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUED 3802 - Guitar I for Music Education and Music Therapy Majors: Developing Group Songleading Skills (2.0 cr)
• MUED 3803 - Guitar II for Music Education and Music Therapy Majors: Developing Group Songleading Skills (2.0 cr)

Conducting
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• MUS 3401 - Basic Conducting (2.0 cr)

Applied Music
Take exactly 14 credit(s) from the following:
MUSA 12xx
Take two semesters at 2 credits per term of MUSA 12xx courses.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUSA 1201 - Piano: Music Education and BA (2.0 cr)
• MUSA 1204 - Voice: Music Education and BA (2.0 cr)
• MUSA 1205 - Violin: Music Education and BA (2.0 cr)
• MUSA 1206 - Viola: Music Education and BA (2.0 cr)
• MUSA 1207 - Cello: Music Education and BA (2.0 cr)
• MUSA 1209 - Flute: Music Education and BA (2.0 cr)
• MUSA 1211 - Oboe: Music Education and BA (2.0 cr)
• MUSA 1212 - Clarinet: Music Education and BA (2.0 cr)
• MUSA 1213 - Saxophone: Music Ed and BA (2.0 cr)
• MUSA 1214 - Bassoon: Music Education and BA (2.0 cr)
• MUSA 1215 - French Horn: Music Education and BA (2.0 cr)
• MUSA 1216 - Trumpet: Music Education and BA (2.0 cr)
• MUSA 1217 - Trombone: Music Education and BA (2.0 cr)
• MUSA 1219 - Tuba: Music Education and BA (2.0 cr)
• MUSA 1221 - Percussion: Music Ed and BA (2.0 cr)
• MUSA 1222 - Harp: Music Education and BA (2.0 cr)
• MUSA 1223 - Guitar: Music Education and BA (2.0 cr)

• MUSA 22xx
Take two semesters at 2 credits per term of MUSA 22xx courses.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUSA 2201 - Piano: Music Ed and BA (2.0 cr)
• MUSA 2204 - Voice: Music Education and BA (2.0 cr)
• MUSA 2205 - Violin: Music Education and BA (2.0 cr)
• MUSA 2206 - Viola: Music Education and BA (2.0 cr)
• MUSA 2207 - Cello: Music Education and BA (2.0 cr)
• MUSA 2208 - Bass: Music Education and BA (2.0 cr)
• MUSA 2209 - Flute: Music Education and BA (2.0 cr)
• MUSA 2211 - Oboe: Music Education and BA (2.0 cr)
• MUSA 2212 - Clarinet: Music Education and BA (2.0 cr)

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• MUSA 2213 - Saxophone: Music Education and BA (2.0 cr)
• MUSA 2214 - Bassoon: Music Education and BA (2.0 cr)
• MUSA 2215 - French Horn: Music Education and BA (2.0 cr)
• MUSA 2216 - Trumpet: Music Education and BA (2.0 cr)
• MUSA 2217 - Trombone: Music Education and BA (2.0 cr)
• MUSA 2219 - Tuba: Music Education and BA (2.0 cr)
• MUSA 2221 - Percussion: Music Education and BA (2.0 cr)
• MUSA 2222 - Harp: Music Education and BA (2.0 cr)
• MUSA 2223 - Guitar: Music Education and BA (2.0 cr)

- MUSA 32xx
Take three semesters at 2 credits per term of MUSA 32xx courses.
Take exactly 3 course(s) totaling exactly 6 credit(s) from the following:
• MUSA 3201 - Piano: Music Education and BA (2.0 cr)
• MUSA 3204 - Voice: Music Education and BA (2.0 cr)
• MUSA 3205 - Violin: Music Education and BA (2.0 cr)
• MUSA 3206 - Viola: Music Education and BA (2.0 cr)
• MUSA 3207 - Cello: Music Education and BA (2.0 cr)
• MUSA 3209 - Flute: Music Education and BA (2.0 cr)
• MUSA 3211 - Oboe: Music Education and BA (2.0 cr)
• MUSA 3212 - Clarinet: Music Education and BA (2.0 cr)
• MUSA 3213 - Saxophone: Music Education and BA (2.0 cr)
• MUSA 3214 - Bassoon: Music Education and BA (2.0 cr)
• MUSA 3215 - French Horn: Music Education and BA (2.0 cr)
• MUSA 3216 - Trumpet: Music Education and BA (2.0 cr)
• MUSA 3217 - Trombone: Music Education and BA (2.0 cr)
• MUSA 3219 - Tuba: Music Education and BA (2.0 cr)
• MUSA 3221 - Percussion: Music Education and BA (2.0 cr)
• MUSA 3222 - Harp: Music Education and BA (2.0 cr)

Ensembles
Take a minimum of seven semesters of ensemble courses.
Take 7 or more credit(s) from the following:
• MUS 3230 - Chorus (1.0 - 2.0 cr)
• MUS 3410 - University Wind Bands (1.0 cr)
• MUS 3420 - Orchestra (1.0 cr)
• MUS 5240 - University Singers (1.0 cr)

Special Needs Courses
Consult with advisor prior to enrolling in BIOL 1010 or KIN 3027.
Take exactly 3 course(s) totaling 10 - 11 credit(s) from the following:
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
• PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
• BIOL 1012 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
  or BIOL 1015 - Human Physiology, Technology, and Medical Devices [BIOL, TS] (4.0 cr)
  or KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
  or NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)

Recital and Voice
Take exactly 2 course(s) totaling exactly 2 credit(s) from the following:
• MUS 951 - Senior Recital (0.0 cr)
• MUS 1260 - Voice Class (2.0 cr)
  or MUSA 1404 - Voice: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)

Capstone - Music Therapy Internship
The Capstone for the Music Therapy BMus is the music therapy internship. After completing all required academic coursework, music therapy majors spend 1,040 hours (approximately six months) in the community practicing music therapy while supervised by Board Certified Music Therapists. The internship can be taken for 1-13 credits. Students who double major and choose to complete the capstone requirement in their other major are still required to take the Music Therapy BMus capstone.
Take exactly 1 course(s) totaling 1 - 13 credit(s) from the following:
• MUED 5855 - Music Therapy Internship (1.0 - 13.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

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Take 0 - 1 course(s) from the following:
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• MUS 3602W - History of Western Music II [WI] (3.0 cr)
• MUS 3603W - History of Western Music III [WI] (3.0 cr)
Twin Cities Campus
Norwegian Minor
German, Nordic, Slavic & Dutch
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 36

The study of Norwegian introduces students to the vibrant culture and society of contemporary Norway. This country is distinguished for its writers, artists, and composers and for its social welfare system, natural resources, and leadership in forestry, fisheries, petroleum engineering and Arctic studies. Students of Norwegian have several opportunities to study in Norway.

Through the acquisition of advanced proficiency in Norwegian, students will gain a unique perspective on such pressing issues as the environment, immigration, gender relations, international security, and nationhood. Learning Norwegian allows you to understand and communicate in Swedish and Danish as well.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning and Intermediate Norwegian
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• NOR 1001 - Beginning Norwegian (5.0 cr)
• NOR 1002 - Beginning Norwegian (5.0 cr)
• NOR 1003 - Intermediate Norwegian (5.0 cr)
• NOR 1004 - Intermediate Norwegian (5.0 cr)

Minor Requirements
Students are required to take 4 semester(s) of Norwegian.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota - Twin Cities campus. In the Norwegian minor, this does not include learning abroad courses taken for resident credit.

Students with a German, Scandinavian, Dutch major may elect a minor in Norwegian, but no courses may count for both the major and the minor.

Readings in Scandinavian Languages
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)

Electives
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
• SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
• SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)
• SCAN 3503 - Scandinavian Folklore [LITR, GP] (3.0 cr)
• SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
• SCAN 3505 - Scandinavian Fiction From 1890 to Present [LITR] (3.0 cr)
• SCAN 3601 - Great Literary Works of Scandinavia [LITR] (3.0 cr)
• SCAN 3602 - The Literary Fairy Tale in Scandinavia [LITR] (3.0 cr)
• SCAN 3604W - Living Pictures: An Introduction to Nordic Cinema [AH, WI] (3.0 cr)
• SCAN 3613 - Children's Literature in Scandinavia [LITR] (3.0 cr)
• SCAN 3670 - Topics in Scandinavian Studies (3.0 cr)

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Information current as of September 02, 2020
• SCAN 5502 - The Icelandic Saga (3.0 cr)
• SCAN 5670 - Topics in Scandinavian Studies (3.0 cr)
• SCAN 5701 - Old Norse Language and Literature (3.0 cr)
• SCAN 5703 - Old Norse Poetry (3.0 cr)
• SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
  or SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
  or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
  or SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
• SCAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
  or SCAN 5634 - Scandinavian Women Writers [GP, LITR] (3.0 cr)

• Directed Study
  Take 0 - 1 course(s) from the following:
  • SCAN 3993 - Directed Studies (1.0 - 4.0 cr)
  • SCAN 5993 - Directed Studies (1.0 - 4.0 cr)
Twin Cities Campus
Ojibwe Language B.A.
American Indian Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 to 45
- Degree: Bachelor of Arts

The goal of the Ojibwe language major is to best situate both heritage and non-heritage Ojibwe students to be able to positively intervene in the cultural life of the state's Ojibwe communities by contributing to the revitalization of the Ojibwe language. As a land grant institution, the University has a mission to contribute to the state's communities, and the major will help fulfill that mission. The department also prioritizes local American Indian community engagement and advocacy. One of the single best ways to create positive change within our communities is to instill pride and celebrate cultural traditions like language at an early age.

What distinguishes this program from any other is our use of both academically rigorous grammatical instruction (supported by linguistic research) coupled with the use of immersion techniques inside the classroom. This method has proven to be a very powerful combination in helping our students reach a high level of proficiency in the Ojibwe language. Students who complete the program to attain this high proficiency will have the foundational skills to contribute to Ojibwe language community building by bringing the Ojibwe language back into the home, to go into the high-demand field of immersion teaching, and to work in language preservation programs. With this major, students will:

1) Be more prepared to fill an ever-growing need for immersion teacher positions;
2) Graduate with a more sophisticated knowledge of the Ojibwe language in general;
3) Graduate with the prestige that comes of having earned a bachelor's degree in the Ojibwe language;
4) Have more time to increase their fluency under instructor supervision;
5) Increase their knowledge of immersion pedagogy;
6) Earn a bachelor's degree in the Ojibwe language (rather than a certificate) thereby increasing both their Ojibwe language credentials and earning potential upon graduation.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite Courses
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses.
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- OJIB 1101 - Beginning Ojibwe I (5.0 cr)
- OJIB 1102 - Beginning Ojibwe II (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete 4 semester(s) of Ojibwe with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major
designator for the Ojibwe language BA is OJIB.

At least 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may combine the Ojibwe Language BA with any other minor or major offered through the Department of American Indian Studies, except the BA in American Indian Studies with the Language sub-plan in Ojibwe.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Core Courses**
Take exactly 8 course(s) totaling exactly 28 credit(s) from the following:
- AMIN 3141 - American Indian Language Planning (3.0 cr)
- AMIN 3604 - Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)
- OJIB 3103 - Intermediate Ojibwe I (5.0 cr)
- OJIB 3104 - Intermediate Ojibwe II (5.0 cr)
- OJIB 5106 - Advanced Ojibwe Language I (3.0 cr)
- OJIB 5109 - Advanced Ojibwe Language II (3.0 cr)
- OJIB 5202 - Ojibwe Mastery I (3.0 cr)
- OJIB 5250 - Ojibwe Master Class (3.0 cr)

**Electives**
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- AMIN 1001 - Introduction to American Indian & Indigenous Peoples [DSJ] (3.0 cr)
- AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
- AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 4511 - Indigenous Political Economies (3.0 cr)
- AMIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
- AMIN 4990 - Topics in American Indian Studies (1.0 - 4.0 cr)
- AMIN 4994 - Directed Research (1.0 - 12.0 cr)
- AMIN 4996 - Field Study (1.0 - 12.0 cr)
- AMIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
- AMIN 5202 - Indigenous Peoples and Issues Before the United States Supreme Court (3.0 cr)
- AMIN 5920 - Topics in American Indian Studies (3.0 cr)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- AAS 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
- AMIN 3001 - Public History (3.0 cr)
  or AMST 3003 - Public History (3.0 cr)
  or HIST 3001 - Public History (3.0 cr)
- AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
  or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
  or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
  or AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  or POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
  or AMIN 5602 - Archaeology and Native Americans [DSJ] (3.0 cr)
  or ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
- AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
  or HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
- AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
- AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
  or AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
  or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• AMIN 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or AMST 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or ANTH 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or CHIC 5412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
  or GWSS 3515 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
  or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)

Capstone
The capstone consists of the writing of a 10-page paper in Ojibwe (15-pages Honors students) and an oral presentation of that paper, and is an opportunity for students to demonstrate their cumulative knowledge and oral language proficiency. The topic of the paper is chosen by the student and approved by the instructor. Students who double major and choose to complete the capstone requirement in their other major are still required to take the Ojibwe Language BA capstone.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
  • OJIB 5204W - Ojibwe Mastery II [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
  • OJIB 5204W - Ojibwe Mastery II [WI] (3.0 cr)
  • AMIN 5201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
    or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  • AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
    or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
Twin Cities Campus
Philosophy B.A.
Philosophy Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 30
- Degree: Bachelor of Arts

If you have ever pondered, "Why am I here?" or "What is the meaning of life?" then you have already thought about philosophy. Philosophy poses questions about human endeavors and examines our basic assumptions about everything we think we know. It takes on challenging issues that sometimes defy resolution and trains the brain to think in a rigorous and analytic way about all the possible answers and what's at stake. Philosophy is not just a subject matter but a way of thinking.

In your philosophy courses, you will learn about the way that people throughout history have engaged in this kind of thinking with questions such as "Can I really trust my senses to tell me about reality?", "Is anything really morally right or wrong or is it all just relative?", "Do scientific theories tell us the truth about the world or are they tools that are useful for certain purposes?" and "Are some societies more just than others?". You will discover that thinking about these questions with an open mind is deeply satisfying. Philosophical thinking also contributes to a worthwhile life; in the words of Socrates "the unexamined life is not worth living".

Of course, life isn't all about having fun thinking. Philosophy is also much more practical than you might think! Because philosophy is so far-reaching, the method it uses for study enhances the study of other fields such as art, math, science, language, and law with tremendous success. It is a great complement to other majors as a second major or a minor. You can find details about good combinations on our website. Also, studying philosophy is a fantastic way to hone your critical thinking and analytic writing skills. You'll learn two types of critical thinking: First, a method for rigorous analysis of arguments. Second, a habit of asking penetrating questions about the hidden assumptions of any position, ideology or practice. You will develop your capacities to conceive of alternative assumptions, evaluate which ones are best and determine where they lead. You'll learn to write papers that clearly demonstrate these skills.

And finally, you can reassure your parents about your choice of philosophy with the fact that the skills of critical thinking and analytic writing are highly desirable and sought by graduate programs and employers. Evidence of this includes:
PHIL majors rank first among all majors in law school acceptance rate: 82.4%.
PHIL majors rank first among all majors in verbal and analytic sections of the GRE (and first among humanities majors in the quantitative section)
PHIL majors score higher on the Graduate Management Admissions Test (the test that most MBA programs require) than students in any business major (management, finance, accounting, marketing, etc.)
PHIL majors' salaries increase more over 10 years than most other majors, including marketing and accounting (The Wall Street Journal).
"The present value of the extra earnings that graduates in humanities majors can expect over their lifetime is $444,700 for English majors, $537,800 for history majors, and $658,900 for philosophy majors" (Forbes).

For more information, visit: http://www.philosophy.umn.edu/

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).
Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Philosophy BA is PHIL.

No more than 8 credits of PHIL 1xxx may count toward the degree. At least two 3-or-more-credit courses must be PHIL 4xxx or higher.

At least 11 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students who double major and choose to complete the capstone requirement in their other major may waive the Philosophy capstone, but are still responsible for taking the 30 credits required for the Philosophy BA.

Students may earn a BA or a minor in philosophy, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 4 course(s) totaling 14 - 16 credit(s) from the following:

History of Philosophy
Take exactly 1 course(s) totaling 4 or more credit(s) from the following:
• PHIL 3001W - General History of Western Philosophy: Ancient Period [AH, WI] (4.0 cr)
• PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)

Logic
Take exactly 1 course(s) totaling 4 or more credit(s) from the following:
• PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
• PHIL 5201 - Symbolic Logic I (4.0 cr)

ELMS (Epistemology/Philosophy of Language/Metaphysics/Philosophy of Science)
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• PHIL 3234 - Knowledge and Society (4.0 cr)
• PHIL 3601W - Scientific Thought [WI] (4.0 cr)
• PHIL 4101 - Metaphysics (3.0 cr)
• PHIL 4105W - Epistemology [WI] (3.0 cr)
• PHIL 4231 - Philosophy of Language (3.0 cr)
• PHIL 4607 - Philosophy of the Biological Sciences (3.0 cr)
• PHIL 4605 - Space and Time (3.0 cr)
  or PHIL 5605 - Space and Time (3.0 cr)

Value Theory
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• PHIL 3311W - Introduction to Ethical Theory [WI] (4.0 cr)
• PHIL 3502W [inactive] [WI] (3.0 cr)
• PHIL 4311W - History of Moral Theories [WI] (3.0 cr)
• PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
• PHIL 4321W [inactive] [WI] (3.0 cr)
• PHIL 4331 - Contemporary Moral Theories (3.0 cr)
• PHIL 4414 - Political Philosophy (3.0 cr)

Philosophy Electives
Students can choose any combination of courses from the Philosophy Electives to reach the 30-credit minimum for the major. Depending on the credit value of the courses taken to fulfill the Required Courses requirement, students will need to take 13-16 credits of electives. Note: No more than 8 credits of PHIL 1xxx can count towards the major.

Aesthetics
Aesthetics is the philosophical study of the arts, especially in regard to such questions as: What is art, and how is it connected to the world? What is the role of beauty in art? Are there objective truths about artistic value? Are there situations in which artistic activity should be restricted or suppressed? Study of aesthetics pairs well with majors in the arts and in art history, as well as in literature and such subjects as sociology, anthropology, psychology and education.
Take 0 or more course(s) from the following:
• PHIL 3502W [inactive] [WI] (3.0 cr)
• PHIL 4501 [inactive] (3.0 cr)
• PHIL 4510 - Philosophy of the Individual Arts (3.0 cr)
  or PHIL 5510 - Philosophy of the Individual Arts (3.0 cr)

Practical/Applied Ethics
Many of the questions we confront in our personal, professional, and civic lives are questions of ethics. Should I buy organically produced food in order to minimize harms to the environment? Should I support affirmative action policies in education or the
workplace? Is mass incarceration unjust? Why? Study of ethics pairs well with students who anticipate pursuing professions such as business, education, human resources, law, and medicine.

Take 0 or more course(s) from the following:
- PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
- PHIL 3304 - Law and Morality (4.0 cr)
- PHIL 3305 - Medical Ethics (4.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

Ethics and Moral Philosophy
In these courses you will explore questions such as: What is it to be a good person? Are there universal principles that distinguish right from wrong? What are our moral obligations? Is morality relative or absolute? Consider taking courses in this area if you are heading for business, law, or medical school, in combination with some courses from the practical ethics group to give you some theoretical background. Ethics courses also pair well with a major in psychology or political science.

Take 0 or more course(s) from the following:
- PHIL 1003W - Introduction to Ethics [CIV, WI] (4.0 cr)
- PHIL 3311W - Introduction to Ethical Theory [WI] (4.0 cr)
- PHIL 4311W - History of Moral Theories [WI] (3.0 cr)
- PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
- PHIL 4331 - Contemporary Moral Problems (3.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

ELM (Epistemology, Language, Metaphysics, Mind)
These courses cover a wide ranging set of issues in contemporary philosophy. In Epistemology, philosophers explore questions such as: What is knowledge? How is knowledge shaped by society and culture? In Metaphysics: Does God exist? Are we free to act the way we choose? In Philosophy of Mind: What is the relationship between the mind and body? What is thinking? In Philosophy of Language: How does language work? What is the relationship between thought and language?

Take 0 or more course(s) from the following:
- PHIL 3231 - Philosophy and Language (4.0 cr)
- PHIL 3234 - Knowledge and Society (4.0 cr)
- PHIL 3607 - Philosophy of Psychology (4.0 cr)
- PHIL 4101 - Metaphysics (3.0 cr)
- PHIL 4105W - Epistemology [WI] (3.0 cr)
- PHIL 4231 - Philosophy of Language (3.0 cr)
- PHIL 4615 - Minds, Bodies, and Machines (3.0 cr)
- PHIL 4085 - Wittgenstein (3.0 cr)
  or PHIL 5085 - Wittgenstein (3.0 cr)

History of Philosophy
In these courses you will reflect on writings by philosophers of the past that explore questions such as: What makes a life worth living? How can I tell if I am doing the right thing? Can a contradictory statement be true? Could I be wrong about most everything I believe? You will find that some authors have ideas different from yours, while others share familiar ideas. Comparing the different with the familiar gives you the opportunity to notice, understand, and evaluate your own assumptions.

Take 0 or more course(s) from the following:
- PHIL 3001W - General History of Western Philosophy: Ancient Period [AH, WI] (4.0 cr)
- PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
- PHIL 4055 - Kant (3.0 cr)
- PHIL 5601 - History of the Philosophy of Science (3.0 cr)
- PHIL 4010 - Ancient Philosophers (3.0 cr)
  or PHIL 5010 - Ancient Philosophers (3.0 cr)

Philosophy of Logic and Mathematics
Logic (and its philosophy) studies the differences between truth and falsity, good and bad arguments, correct and incorrect reasoning, necessity and possibility, and the finite and the infinite. In logic courses we introduce precise symbolic methods for representing various kinds of reasoning, and we develop systematic tools for differentiating the good arguments from the bad. The study of logic pairs especially well with mathematics, statistics, economics, and physics.

Take 0 or more course(s) from the following:
- PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
- PHIL 5201 - Symbolic Logic I (4.0 cr)
- PHIL 5202 - Symbolic Logic II (4.0 cr)
- PHIL 5211 - Modal Logic (4.0 cr)
- PHIL 5221 (Inactive) (3.0 cr)
- PHIL 5222 - Philosophy of Mathematics (3.0 cr)

Political Philosophy and Philosophy of Law
What is justice? What is the purpose of the state? What obligations does the state have to its citizens and vice versa? What is law? What may or must citizens do in the face of unjust laws? These are some of the questions addressed in courses in political philosophy and philosophy of law. These questions prepare you for a career in law, politics, or public service. Courses in these areas compliment majors in political science, history or economics, as well as any major that focuses on justice.
Take 0 or more course(s) from the following:

- PHIL 1004W - Introduction to Political Philosophy [AH, CIV, WI] (4.0 cr)
- PHIL 3304 - Law and Morality (4.0 cr)
- PHIL 4321W [Inactive] [WI] (3.0 cr)
- PHIL 4414 - Political Philosophy (3.0 cr)
- PHIL 5415 - Philosophy of Law (3.0 cr)

Philo**s**ophy of Science

What makes a claim "scientific"? How do scientists know when they have a good theory? How can we make informed evaluations of scientific claims in order to participate knowledgeably in society and make good choices in everyday life? Philosophy of science courses address these and other questions exploring the nature of scientific reasoning. These include exploring characteristics in case studies from scientific research, as well as analyzing ideas that have emerged in modern science.

Take 0 or more course(s) from the following:

- PHIL 3601W - Scientific Thought [WI] (4.0 cr)
- PHIL 3602 - Science, Technology, and Society (3.0 cr)
- PHIL 4605 - Space and Time (3.0 cr)
- PHIL 4607 - Philosophy of the Biological Sciences (3.0 cr)
- PHIL 5601 - History of the Philosophy of Science (3.0 cr)
- PHIL 5602 - Scientific Representation and Explanation (3.0 cr)
- PHIL 5603 - Scientific Inquiry (3.0 cr)
- PHIL 5605 - Space and Time (3.0 cr)
- PHIL 5606 - Philosophy of Quantum Mechanics (3.0 cr)
- PHIL 1005 - Scientific Reasoning (4.0 cr)
  or PHIL 1005H [Inactive] (4.0 cr)

Additional Options

Take 0 or more course(s) from the following:

- PHIL 4326 - Lives Worth Living: Questions of Self, Vocation, and Community [CIV, AH] (4.0 cr)

Capstone

The Philosophy capstone culminates students' work in the major. It offers opportunities to engage and combine skills in analysis, critical thinking, and cogent expression developed throughout the course of undergraduate work in philosophy. All options require instructor permission and enrollment in PHIL 4995 or PHIL 4995H. Some options require additional enrollment.

Take 1 - 2 course(s) totaling 1 or more credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major may waive the Philosophy capstone, but are still responsible for taking the 30 credits required for the Philosophy BA.

- **Capstone Paper**
  through independent research
  A content-rich independent research paper (of roughly 15 pages) under supervision of a faculty advisor. Capstone papers should be written in drafts with some revision in response to feedback from your supervisor.

  PHIL 4995 - Senior Project (Directed Studies) (1.0 cr)

  or in conjunction with a philosophy course
  Complete the capstone paper (of roughly 15 pages) concurrently with a philosophy course taught by a faculty member. The capstone paper can be an elaboration of an assignment for the class, but it must be enough pages and it should be revised in response to feedback from your supervisor. The capstone paper cannot be identical to a paper submitted as part of the regular course requirements; some additional work is required. Instructor permission and registration in PHIL 4995 required.

  PHIL 4995 - Senior Project (Directed Studies) (1.0 cr)

- **8xxx-level options**
  Graduate seminar
  Complete all the required work for an 8xxx-level graduate seminar. Students must register for PHIL 5993 (generally 3 credits), PHIL 4995, and attend the seminar. Do not register for the 8xxx-level seminar.

  PHIL 4995 - Senior Project (Directed Studies) (1.0 cr)
  PHIL 5993 - Directed Studies (1.0 - 3.0 cr)

  or Graduate workshop
  Complete all the required work for an 8xxx-level graduate workshop, which must include one written assignment beyond what is required by the associated 4xxx-level course. Students must take the associated 4xxx-level class, register for PHIL 4995, and attend the workshop meetings. Do not register for the 8xxx-level workshop. Workshop meeting times are usually arranged the first day of class.

  PHIL 4995 - Senior Project (Directed Studies) (1.0 cr)
  PHIL 4xxx that is cross-listed with a PHIL 8xxx-level graduate workshop

- **Non-traditional capstone project**
  Complete a non-traditional philosophy project with guidance from a faculty supervisor. Examples of such projects include: editing the undergraduate philosophy journal, creating a prototype for a philosophy magazine, or conducting a semester-long philosophy reading group. Not all faculty members are willing to supervise non-traditional projects. If you want to take this option it is important to get to know your professors and find someone who is willing to work with you.

  PHIL 4995 - Senior Project (Directed Studies) (1.0 cr)

- **Honors Thesis**
• PHIL 4995H - Honors Senior Project (1.0 cr)

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- PHIL 3001W - General History of Western Philosophy: Ancient Period [AH, WI] (4.0 cr)
- PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
- PHIL 3311W - Introduction to Ethical Theory [WI] (4.0 cr)
- PHIL 3502W [Inactive] [WI] (3.0 cr)
- PHIL 3601W - Scientific Thought [WI] (4.0 cr)
- PHIL 4105W - Epistemology [WI] (3.0 cr)
- PHIL 4311W - History of Moral Theories [WI] (3.0 cr)
- PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
- PHIL 4321W [Inactive] [WI] (3.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

**Program Sub-plans**

A sub-plan is not required for this program.

**Ethics and Civic Life**

The Department of Philosophy's optional concentration in ethics and civic life is an opportunity for students who are interested in ethics and community service to relate their experiences in the classroom to their work in the community and vice versa. Students who complete the concentration will receive acknowledgment on their transcripts.

**Ethics and Civic Life Concentration Courses**

Ethics and Civic Life Concentration Courses also count towards the Philosophy Electives in within the major.

Take 3 or more course(s) from the following:

- PHIL 1004W - Introduction to Political Philosophy [AH, CIV, WI] (4.0 cr)
- PHIL 1006W - Philosophy and Cultural Diversity [AH, DSJ, WI] (4.0 cr)
- PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
- PHIL 3304 - Law and Morality (4.0 cr)
- PHIL 3305 - Medical Ethics (4.0 cr)
- PHIL 3307 [Inactive] [AH, CIV] (4.0 cr)
- PHIL 3602 - Science, Technology, and Society (3.0 cr)
- PHIL 4326 - Lives Worth Living: Questions of Self, Vocation, and Community [CIV, AH] (4.0 cr)
- PHIL 4414 - Political Philosophy (3.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

**Community Service**

The community service component may be completed by taking a practicum course in philosophy (for example, PHIL 1007 in conjunction with 1004W); a community service component of one of the above courses; or a directed study in philosophy with a community service component.
Twin Cities Campus
Philosophy Minor
Philosophy Department
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 14

If you have ever pondered, "Why am I here?" or "What is the meaning of life?" then you have already thought about philosophy. Philosophy poses questions about every human endeavor and examines our basic assumptions about everything we think we know. It takes on challenging issues that sometimes defy resolution and trains the brain to think in a rigorous and analytic way about all the possible answers and what's at stake. Philosophy is not just a subject matter but a way of thinking.

In your philosophy courses, you will learn about the way that people throughout history have engaged in this kind of thinking with questions such as "Can I really trust my senses to tell me about reality?", "Is anything really morally right or wrong or is it all just relative?", "Do scientific theories tell us the truth about the world or are they tools that are useful for certain purposes?" and "Are some societies more just than others?". You will discover that thinking about these questions with an open mind is deeply satisfying. Philosophical thinking also contributes to a worthwhile life; in the words of Socrates "the unexamined life is not worth living".

Of course, life isn't all about having fun thinking. Philosophy is also much more practical than you might think! Because philosophy is so far-reaching, the method it uses for study enhances the study of other fields such as art, math, science, language, and law with tremendous success. It is a great complement to other majors as a second major or a minor. You can find details about good combinations on our website. Also, studying philosophy is a fantastic way to hone your critical thinking and analytic writing skills. You'll learn two types of critical thinking: First, a method for rigorous analysis of arguments. Second, a habit of asking penetrating questions about the hidden assumptions of any position, ideology or practice. You will develop your capacities to conceive of alternative assumptions, evaluate which ones are best and determine where they lead. You'll learn to write papers that clearly demonstrate these skills.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
At least 8 upper-division credits in the minor must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a B.A. or a minor in philosophy, but not both.

The philosophy minor is unstructured, but we recommend giving your minor program your own structure one that will enrich your major or allow you to explore a side interest in a concentrated way. To help you do this, we have grouped the philosophy courses into sub-fields in order to help you choose a set of courses that matches your interests. For example, if you are interested in law school, we recommend taking electives in philosophy of law, ethics, and political philosophy. If you are interested in science or medicine, we recommend taking electives in medical ethics, environmental ethics and philosophy of science. If you were a math wiz in high school, you might enjoy taking electives in logic and philosophy of math. If you are interested in art, electives in aesthetics could be rewarding for you. For anyone planning to go into a professional program, courses in both logic and applied ethics will be beneficial.

Minor Courses
Students can choose any combination of courses from the Minor Courses to reach the 14-credit minimum of the minor. Note: Some of the courses on this list have prerequisites.

Take 14 or more credit(s) from the following:

Aesthetics
Aesthetics is the philosophical study of the arts, especially in regard to such questions as: What is art, and how is it connected to the world? What is the role of beauty in art? Are there objective truths about artistic value? Are there situations in which artistic activity should be restricted or suppressed? Study of aesthetics pairs well with majors in the arts and in art history, as well as in literature and such subjects as sociology, anthropology, psychology and education.

Take 0 or more course(s) from the following:
• PHIL 3502W (inactive) [WI] (3.0 cr)
• PHIL 4501 (inactive) (3.0 cr)
• PHIL 4510 - Philosophy of the Individual Arts (3.0 cr)
PHIL 5510 - Philosophy of the Individual Arts (3.0 cr)

Practical Ethics
Many of the questions we confront in our personal, professional, and civic lives are questions of ethics. Should I buy organically produced food in order to minimize harms to the environment? Should I support affirmative action policies in education or the workplace? Is mass incarceration unjust? Why? Study of ethics pairs well with students who anticipate pursuing professions such as business, education, human resources, law, and medicine.

Take 0 or more course(s) from the following:
- PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
- PHIL 3304 - Law and Morality (4.0 cr)
- PHIL 3305 - Medical Ethics (4.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)

Ethics and Moral Philosophy
In these courses you will explore questions such as: What is it to be a good person? Are there universal principles that distinguish right from wrong? What are our moral obligations? Is morality relative or absolute? Consider taking courses in this area if you are heading for business, law, or medical school, in combination with some courses from the practical ethics group to give you some theoretical background. Ethics courses also pair well with a major in psychology or political science.

Take 0 or more course(s) from the following:
- PHIL 3311W - Introduction to Ethical Theory [WI] (4.0 cr)
- PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- PHIL 4311W - History of Moral Theories [WI] (3.0 cr)
- PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
- PHIL 4331 - Contemporary Moral Theories (3.0 cr)

ELM (Epistemology, Language, Metaphysics, Mind)
These courses cover a wide ranging set of issues in contemporary philosophy. In Epistemology, philosophers explore questions such as: What is knowledge? How is knowledge shaped by society and culture? In Metaphysics: Does God exist? Are we free to act the way we choose? In Philosophy of Mind: What is the relationship between the mind and body? What is thinking? In Philosophy of Language: How does language work? What is the relationship between thought and language?

Take 0 or more course(s) from the following:
- PHIL 3231 - Philosophy and Language (4.0 cr)
- PHIL 3234 - Knowledge and Society (4.0 cr)
- PHIL 3607 - Philosophy of Psychology (4.0 cr)
- PHIL 4101 - Metaphysics (3.0 cr)
- PHIL 4105W - Epistemology [WI] (3.0 cr)
- PHIL 4231 - Philosophy of Language (3.0 cr)
- PHIL 4615 - Minds, Bodies, and Machines (3.0 cr)
- PHIL 4085 - Wittgenstein (3.0 cr)
- PHIL 5085 - Wittgenstein (3.0 cr)

History of Philosophy
In these courses you will reflect on writings by philosophers of the past that explore questions such as: What makes a life worth living? How can I tell if I am doing the right thing? Can a contradictory statement be true? Could I be wrong about most everything I believe? You will find that some authors have ideas different from yours, while others share familiar ideas. Comparing the different with the familiar gives you the opportunity to notice, understand, and evaluate your own assumptions.

Take 0 or more course(s) from the following:
- PHIL 3001W - General History of Western Philosophy: Ancient Period [AH, WI] (4.0 cr)
- PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
- PHIL 4055 - Kant (3.0 cr)
- PHIL 5601 - History of the Philosophy of Science (3.0 cr)
- PHIL 4010 - Ancient Philosophers (3.0 cr)
- PHIL 5010 - Ancient Philosophers (3.0 cr)

Philosophy of Logic and Mathematics
Logic (and its philosophy) studies the differences between truth and falsity, good and bad arguments, correct and incorrect reasoning, necessity and possibility, and the finite and the infinite. In logic courses we introduce precise symbolic methods for representing various kinds of reasoning, and we develop systematic tools for differentiating the good arguments from the bad. The study of logic pairs especially well with mathematics, statistics, economics, and physics.

Take 0 or more course(s) from the following:
- PHIL 5201 - Symbolic Logic I (4.0 cr)
- PHIL 5202 - Symbolic Logic II (4.0 cr)
- PHIL 5211 - Modal Logic (4.0 cr)
- PHIL 5221 [inactive] (3.0 cr)
- PHIL 5222 - Philosophy of Mathematics (3.0 cr)

Political Philosophy and Philosophy of Law
What is justice? What is the purpose of the state? What obligations does the state have to its citizens and vice versa? What is law? What may or must citizens do in the face of unjust laws? These are some of the questions addressed in courses in political philosophy and philosophy of law. These questions prepare you for a career in law, politics, or public service. Courses in these areas
compliment majors in political science, history or economics, as well as any major that focuses on justice.

Take 0 or more course(s) from the following:

- **PHIL 3304** - Law and Morality (4.0 cr)
- **PHIL 4321W** [inactive][WI] (3.0 cr)
- **PHIL 4414** - Political Philosophy (3.0 cr)
- **PHIL 5415** - Philosophy of Law (3.0 cr)

**Philosophy of Science**
What makes a claim "scientific"? How do scientists know when they have a good theory? How can we make informed evaluations of scientific claims in order to participate knowledgeably in society and make good choices in everyday life? Philosophy of science courses address these and other questions about the nature of scientific reasoning. This includes exploring characteristics of hypotheses in case studies from scientific research, as well as analyzing ideas that have emerged in modern science.

Take 0 or more course(s) from the following:

- **PHIL 3601W** - Scientific Thought [WI] (4.0 cr)
- **PHIL 3602** - Science, Technology, and Society (3.0 cr)
- **PHIL 4605** - Space and Time (3.0 cr)
- **PHIL 4607** - Philosophy of the Biological Sciences (3.0 cr)
- **PHIL 5601** - History of the Philosophy of Science (3.0 cr)
- **PHIL 5602** - Scientific Representation and Explanation (3.0 cr)
- **PHIL 5603** - Scientific Inquiry (3.0 cr)
- **PHIL 5605** - Space and Time (3.0 cr)
- **PHIL 5606** - Philosophy of Quantum Mechanics (3.0 cr)

**Additional Options**
Take 0 or more course(s) from the following:

- **PHIL 4326** - Lives Worth Living: Questions of Self, Vocation, and Community [CIV, AH] (4.0 cr)
Twin Cities Campus
Physics B.A.
School of Physics & Astronomy
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 60
- Degree: Bachelor of Arts

The undergraduate physics program prepares students for employment, often in industrial or governmental laboratories, or for further study at graduate or professional schools in physics, engineering, biophysics, medicine, education, law, or business.

The program integrates a broad foundation in physics that can be flexibly combined with coursework in other technical disciplines or used to specialize in physics. Students should consult a physics adviser to help formulate objectives for undergraduate study.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 7 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:

Calculus I
• MATH 1271 - Calculus I [MATH] (4.0 cr)
• MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
• MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
• MATH 1272 - Calculus II (4.0 cr)
• MATH 1372 - CSE Calculus II (4.0 cr)
• MATH 1572H - Honors Calculus II (4.0 cr)

Linear Algebra
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
• MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
• MATH 2574H - Honors Calculus IV (4.0 cr)

Physics
Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:

Physics I
• PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
• PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Physics II
• PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
• PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Thermodynamics
• PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)

Physics III
• PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
• PHYS 2503H - Honors Physics III (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in
which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Physics BA is PHYS.

At least 12 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn no more than one undergraduate degree in the physics program: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Multivariable Calculus**
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- MATH 2573H - Honors Calculus III (4.0 cr)

**Foundational Courses**
Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:
- PHYS 2601 - Quantum Physics (4.0 cr)
- PHYS 3041 - Mathematical Methods for Physicists (3.0 cr)

**Experimental Physics Courses**
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 cr)

**Advanced Physics Courses**
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (4.0 cr)
- PHYS 4101 - Quantum Mechanics (4.0 cr)

**Capstone**
The capstone requires the students to carry out an independent experimental research project and report on the results both orally and in written form. The capstone experience is a culmination of both experimental technique and the ability to apply mathematical models to physical phenomena. Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the Physics BA capstone.

Take exactly 1 course(s) totaling exactly 5 credit(s) from the following:
The capstone is completed in PHYS 4025W, or by some alternate means subject to prior departmental approval. Should the approved alternate physics project total fewer than 5 credits, an additional physics elective at the 3xxx-level or higher is required to meet the 5-credit capstone minimum.
- PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 2 course(s) from the following:
- PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
- PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)
**Twin Cities Campus**

**Physics Minor**

*School of Physics & Astronomy*

*College of Liberal Arts*

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 38 to 40

The principles of physics underlie many areas of science and technology, including engineering, biotechnology, medicine, and other sciences. The physics minor provides a broad introduction to the principles of physics and its use for modeling and solving practical problems.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Minor Requirements**

Students may earn no more than one degree in the Department of Physics: a BA or a BS or a minor.

**Mathematics**

Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:

- **Calculus I**
  - MATH 1271 - Calculus I [MATH] (4.0 cr)
  - MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  - MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

- **Calculus II**
  - MATH 1272 - Calculus II (4.0 cr)
  - MATH 1372 - CSE Calculus II (4.0 cr)
  - MATH 1572H - Honors Calculus II (4.0 cr)

- **Linear Algebra**
  - MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
  - MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
  - MATH 2574H - Honors Calculus IV (4.0 cr)

**Physics**

Take exactly 4 course(s) totaling exactly 16 credit(s) from the following:

- **Physics I**
  - PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  - PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

- **Physics II**
  - PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  - PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

- **Thermodynamics**
  - PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)

- **Physics III**
  - PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
  - PHYS 2503H - Honors Physics III (4.0 cr)

**Quantum Physics**

Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:

- PHYS 2601 - Quantum Physics (4.0 cr)
- PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)

**Physics/Astrophysics Elective**

Take 1 or more course(s) totaling 3 - 5 credit(s) from the following:

- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)
- AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
• AST 5012 - The Interstellar Medium (4.0 cr)
• AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
• PHYS 3022 - Introduction to Cosmology (3.0 cr)
• PHYS 3041 - Mathematical Methods for Physicists (3.0 cr)
• PHYS 4001 - Analytical Mechanics (4.0 cr)
• PHYS 4002 - Electricity and Magnetism (4.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
• PHYS 4211 - Introduction to Solid-State Physics (3.0 cr)
• PHYS 4303 - Electrodynamics and Waves (3.0 cr)
• PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• PHYS 5001 - Quantum Mechanics I (4.0 cr)
• PHYS 5002 - Quantum Mechanics II (4.0 cr)
• PHYS 5011 - Classical Physics I (4.0 cr)
• PHYS 5012 - Classical Physics II (4.0 cr)
• PHYS 5041 - Mathematical Methods for Physics (4.0 cr)
• PHYS 5201 - Thermal and Statistical Physics (3.0 cr)
• PHYS 5701 - Solid-State Physics for Engineers and Scientists (4.0 cr)
• PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  or AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
• PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
  or HSCI 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
  or PHYS 5621 - Introduction to Plasma Physics (3.0 cr)
• PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
  or PHYS 5081 - Introduction to Biopolymer Physics (3.0 cr)
• PHYS 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
  or AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
Twin Cities Campus
Political Science B.A.
Political Science Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 35
- Degree: Bachelor of Arts

Political science examines who gets what, when, and how from government. Political scientists study voters, politicians, interest groups, political parties, social movements, institutions, states, and public policies at all levels, from local communities to the global community. The discipline covers four thematic areas: American Politics, Comparative Politics, International Relations, and Political Theory. Political scientists employ multiple tools to learn about politics, including historical methods, case studies, and statistical, archival, and critical analyses. Political science majors develop an array of skills acquired through coursework, research opportunities with individual faculty, and internships that open multiple career opportunities in public, private, and non-profit sectors.

Students of American Politics seek to understand the way that collective governance happens in the United States. The American Politics subfield is divided into two areas: Political Behavior is the study of public opinion and electoral behavior of voting age adults, and Political Institutions is the study of the formal and informal structures of governance in the United States. Students will learn how research projects are designed and, in some courses, how to collect, examine and present data.

In Comparative Politics, we seek to identify factors that explain political outcomes across time and space, with an eye to patterns that transcend historical and geographic particularities. Although Comparative Politics is sometimes thought to refer to the study of politics outside the United States, comparativists reject the idea that American politics are not amenable to comparative analysis. Comparative Politics courses will make you a more informed and discerning citizen in our interconnected world.

In International Relations, we study how the countries of the world do and don't get along. We address fundamental questions of war and peace, conflict and cooperation, trade, migration, and finance. Taking courses in International Relations helps students better understand how the world works. Students will be expected to write policy memos, conduct independent research, take part in simulations and debates, and devise policy solutions to complicated challenges.

Political Theory analyzes the meaning and significance of fundamental political concepts. Starting from foundational concerns as the nature of politics, humans, power and justice, theorists explore how these basic starting assumptions organize the norms, practices, and institutions of political and social order. Students who study Political Theory become more adept at critical thinking, careful reading and clear writing, and recognizing and constructing arguments. These skills are basic for the critical, lifelong role that all of us play as members of political community.

Taking classes across the subfields enables students to become more informed citizens and to pursue a wide variety of careers. Political science majors learn skills including oral and written communication, analytical and critical thinking, problem solving, teamwork, and digital competencies.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
It is strongly recommended that students complete one POL 1xxx course prior to admission to the major. See "Preparatory Courses" under program requirements for suggested courses.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).
Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the political science BA is POL.

Students must take at least 27 upper division credits, including the capstone.

Students may earn a BA or a minor in political science, but not both.

At least 15 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Courses
It is strongly recommended, but not required, that majors complete lower division POL coursework. No more than 8 credits of POL 1xxx may count toward the BA.

Take 0 - 8 credit(s) from the following:
- POL 1026 - U.S. Foreign Policy (3.0 cr)
- POL 1054 - Politics Around the World [SOCS, GP] (3.0 cr)
- POL 1201 - Political Ideas [HIS, CIV] (3.0 cr)
- POL 19xx - Freshman Seminar
- POL 1001 - American Democracy in a Changing World [SOCS] (3.0 cr)
  - or POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (3.0 cr)
- POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  - or AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- POL 1025 - Global Politics [SOCS, GP] (3.0 cr)
  - or POL 1025H - Honors: Global Politics [SOCS, GP] (4.0 cr)

Electives
Take at least one course from three of the four subfields: political theory, comparative government, international relations, and American government. Students who do not choose to complete an optional sub-plan should take remaining upper division coursework from these course lists to reach the 24-credit minimum.

Take 24 or more credit(s) from the following:

Political Theory
Take 0 or more credit(s) from the following:
- POL 3225 - American Political Thought [CIV] (3.0 cr)
- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3251W - Power, Virtue, and Vice: Ancient and Early Modern Political Theory [WI] (3.0 cr)
- POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
- POL 3265 - Ideas and Protest in French Postwar Thought [AH, CIV] (3.0 cr)
- POL 3272 - What Makes Political Community? [CIV] (3.0 cr)
- POL 4210 - Topics in Political Theory (3.0 cr)
- POL 4255 - Comparative Real Time Political Analysis: Marxist versus Liberal Perspectives [HIS, GP] (3.0 cr)
- POL 4267 - Imperialism and Modern Political Thought [HIS, CIV] (3.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
- POL 5210 - Topics in Political Theory (3.0 cr)
- POL 5280 - Topics in Political Theory (3.0 - 4.0 cr)

Comparative Government
Take 0 or more credit(s) from the following:
- POL 3410 - Topics in Comparative Politics (3.0 cr)
- POL 3423 - Politics of Disruption: Violence and Its Alternatives [GP] (3.0 cr)
- POL 3431 - Politics of India [GP] (3.0 cr)
- POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 3464 - The Politics of Economic Inequality (3.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3479 - Latin American Politics [GP] (3.0 cr)
- POL 3481H - Comparative Political Economy: Governments and Markets (3.0 cr)
- POL 3499W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
- POL 4410 - Topics in Comparative Politics (3.0 cr)
- POL 4463 - The Cuban Revolution Through the Words of Cuban Revolutionaries [GP] (3.0 cr)
- POL 4474W - Russian Politics: From Soviet Empire to Post-Soviet State [WI] (3.0 cr)
- POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
• POL 4487 - The Struggle for Democratization and Citizenship (3.0 cr)
• POL 4494W - US-Latin American Relations [WI] (3.0 cr)
• POL 4497 - Patronage & Corruption [GP] (3.0 cr)
• POL 5410 - Topics in Comparative Politics (1.0 - 3.0 cr)
• POL 5477 - Struggles and Issues in the Middle East (4.0 cr)
• POL 4433W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
  or POL 5403 - Constitutions, Democracy, and Rights: Comparative Perspectives (3.0 cr)
• POL 4461W - European Government and Politics [GP, WI] (3.0 cr)
  or POL 5461 - European Government and Politics (4.0 cr)
• POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
  or POL 5465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
• POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
  or AFRO 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
• POL 4492 - Law and (In)Justice in Latin America (3.0 cr)
  or POL 5492 - Law and (In)Justice in Latin America (3.0 cr)

• American Government
Take 0 or more credit(s) from the following:
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
• POL 3306 - Presidential Leadership and American Democracy (3.0 cr)
• POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
• POL 3309 - U.S. Supreme Court Decision-Making, Process, and Politics (3.0 cr)
• POL 3310 - Topics in American Politics (3.0 cr)
• POL 3317 - Food Politics: Actors, Arenas, and Agendas [SOCS] (3.0 cr)
• POL 3319 - Education and the American Dream [SOCS, DSJ] (3.0 cr)
• POL 3321 - Issues in American Public Policy (3.0 cr)
• POL 3323 - Political Tolerance in the United States (3.0 cr)
• POL 3325 - U.S. Campaigns and Elections (3.0 cr)
• POL 3329 - The Balance of Power: Federalism & Community in the United States (3.0 cr)
• POL 3733 - From Suffragettes to Senators: Gender, Politics & Policy in the U.S. [DSJ] (3.0 cr)
• POL 3766 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
• POL 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
• POL 4310 - Topics in American Politics (3.0 cr)
• POL 4317 - Becoming Stupid: Anti-Science in American Politics (3.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 4771 - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
• POL 4773W - Advocacy Organizations, Social Movements, and the Politics of Identity [DSJ, WI] (3.0 cr)
• POL 4306 - Presidential Leadership and American Democracy (3.0 cr)
• POL 5310 - Topics in American Politics (3.0 cr)
• POL 5322 - Rethinking the Welfare State (3.0 - 4.0 cr)
• POL 5327 - Politics of American Cities and Suburbs (3.0 cr)
• POL 5331 - Thinking Strategically in Domestic Politics (3.0 - 4.0 cr)
• POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  or AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• POL 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
  or CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (3.0 cr)
  or POL 5315 - State Governments: Laboratories of Democracy (3.0 cr)
• POL 4335 - African American Politics (3.0 cr)
  or AFRO 4335 - African American Politics (3.0 cr)
• POL 4502W - The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)
  or POL 5502 - Supreme Court, Civil Liberties, and Civil Rights (3.0 cr)
• POL 4525W - Federal Indian Policy [WI] (3.0 cr)
  or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
  or POL 5525 - Federal Indian Policy (3.0 cr)
• POL 4737W - American Political Parties [WI] (4.0 cr)
  or POL 5737 - American Political Parties (3.0 cr)

• International Relations
Take 0 or more credit(s) from the following:
• POL 3810 - Topics in International Relations and Foreign Policy (3.0 cr)
• POL 3835 - International Relations [SOCS, GP] (3.0 cr)
• POL 4810 - Topics in International Politics and Foreign Policy (3.0 cr)
• POL 4881 - The Politics of International Law and Global Governance [GP] (3.0 cr)
• POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)
• POL 4891 - The Politics of Nuclear Weapons (3.0 cr)
• POL 5810 - Topics in International Politics and Foreign Policy (3.0 cr)
• POL 3833 - The United States and the Global Economy (3.0 cr)
  or POL 5833 - The United States in the Global Economy/US For Econ Policy (3.0 - 4.0 cr)
• POL 4885W - International Conflict and Security [GP, WI] (3.0 cr)
  or POL 5885 - International Conflict and Security (3.0 cr)
• Additional Courses
  Take 0 or more credit(s) from the following:
  • POL 3065 - Political Engagement Careers: Planning and Preparing For Your Future [CIV] (3.0 cr)
  • POL 3108H - Honors Tutorial: Thesis Preparation and Political Science Inquiry (3.0 cr)
  • POL 3994 - Directed Research: Distinguished Undergraduate Research Program (2.0 cr)
  • POL 4085 - Advanced Political Data Analysis (4.0 cr)
  • POL 4993 - Honors Thesis: Directed Studies (1.0 - 6.0 cr)
  • POL 4994 - Directed Research: Individual (1.0 - 4.0 cr)
  • POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
    or POL 3085H - Honors Course: Quantitative Analysis in Political Science [MATH] (4.0 cr)
• Faculty-Supervised
  Take at most 6 credit(s) from the following:
  • POL 3080 - Internship in Politics or Government (3.0 - 13.0 cr)

Capstone
The political science capstone provides students with a unique opportunity to reflect on, articulate, share, and build on their individual experiences in the major. It invites students to reflect on what they have learned as political science majors; to demonstrate their knowledge through the preparation of a portfolio of materials; and to think about how the knowledge, skills, and insights of acquired in their major experience can be used and applied outside of the University.

Students who double major and choose to complete the capstone requirement in their other major may waive the political science BA capstone, but are still responsible for taking a minimum of 35 credits towards the political science BA.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• POL 4991 - Political Science Capstone (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
• POL 3251W - Power, Virtue, and Vice: Ancient and Early Modern Political Theory [WI] (3.0 cr)
• POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
• POL 3489W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (3.0 cr)
• POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
• POL 4461W - European Government and Politics [GP, WI] (3.0 cr)
• POL 4474W - Russian Politics: From Soviet Empire to Post-Soviet State [WI] (3.0 cr)
• POL 4494W - US-Latin American Relations [WI] (3.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 4502W - The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)
• POL 4737W - American Political Parties [WI] (4.0 cr)
• POL 4773W - Advocacy Organizations, Social Movements, and the Politics of Identity [DSJ, WI] (3.0 cr)
• POL 4885W - International Conflict and Security [GP, WI] (3.0 cr)
• AFRO 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
  or POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
• POL 4525W - Federal Indian Policy [WI] (3.0 cr)
  or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Political Science Minor
Political Science Department
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16

Political science examines who gets what, when, and how from government. Political scientists study voters, politicians, interest groups, political parties, social movements, institutions, states, and public policies at all levels, from local communities to the global community. The discipline covers four thematic areas: American Politics, Comparative Politics, International Relations, and Political Theory. Political scientists employ multiple tools to learn about politics, including historical methods, case studies, and statistical, archival, and critical analyses. Political science majors develop an array of skills acquired through coursework, research opportunities with individual faculty, and internships that open multiple career opportunities in public, private, and non-profit sectors.

Students of American Politics seek to understand the way that collective governance happens in the United States. The American Politics subfield is divided into two areas: Political Behavior is the study of public opinion and electoral behavior of voting age adults, and Political Institutions is the study of the formal and informal structures of governance in the United States. Students will learn how research projects are designed and, in some courses, how to collect, examine and present data.

In Comparative Politics, we seek to identify factors that explain political outcomes across time and space, and closely examine patterns that transcend historical and geographic particularities. Although Comparative Politics is sometimes thought to refer to the study of politics outside the United States, comparativists reject the idea that American politics are not amenable to comparative analysis. Comparative Politics courses will make you a more informed and discerning citizen in our interconnected world.

In International Relations, we study how the countries of the world do and dont get along. We address fundamental questions of war and peace, conflict and cooperation, trade, migration, and finance. Taking courses in International Relations helps students better understand how the world works. Students will be expected to write policy memos, conduct independent research, take part in simulations and debates, and devise policy solutions to complicated challenges.

Political Theory analyzes the meaning and significance of fundamental political concepts. Starting from foundational concerns as the nature of politics, humans, power and justice, theorists explore how these basic starting assumptions organize the norms, practices, and institutions of political and social order. Students who study Political Theory become more adept at critical thinking, careful reading and clear writing, and recognizing and constructing arguments. These skills are basic for the critical, lifelong role that all of us play as members of a political community.

Taking classes across the subfields enables students to become more informed citizens and to pursue a wide variety of careers. Political science majors learn skills including oral and written communication, analytical and critical thinking, problem solving, teamwork, and digital competencies.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Political science minors who major in global studies must complete at least two upper-division courses outside of the comparative government and international relations subfields. Global studies majors must take at least two upper-division courses from political theory or American government.

At least 8 upper-division credits in the minor must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BA or a minor in political science, but not both.

Electives
Take at least one course in two of the four subfields: political theory, American government, comparative government, and international relations.
Take 16 or more credit(s) from the following:
Lower-Division Courses
Take 0 - 8 credit(s) from the following:

- POL 1026 - U.S. Foreign Policy [SOCS, GP] (3.0 cr)
- POL 1054 - Politics Around the World [SOCS, GP] (3.0 cr)
- POL 1201 - Political Ideas [HIS, CIV] (3.0 cr)
- POL 19xx - Freshman Seminar
- POL 1001 - American Democracy in a Changing World [SOCS] (3.0 cr)
  or POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (3.0 cr)
- POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  or AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- POL 1025 - Global Politics [SOCS, GP] (3.0 cr)
  or POL 1025H - Honors: Global Politics [SOCS, GP] (4.0 cr)

**Political Theory**

Take 0 or more credit(s) from the following:

- POL 3225 - American Political Thought [CIV] (3.0 cr)
- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3251W - Citizen, Virtue, and Vice: Ancient and Early Modern Political Theory [WI] (3.0 cr)
- POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
- POL 3265 - Ideas and Protest in French Postwar Thought [AH, CIV] (3.0 cr)
- POL 3272 - What Makes Political Community? [CIV] (3.0 cr)
- POL 4210 - Topics in Political Theory (3.0 cr)
- POL 4255 - Comparative Real Time Political Analysis: Marxist versus Liberal Perspectives [HIS, GP] (3.0 cr)
- POL 4267 - Imperialism and Modern Political Thought [HIS, CIV] (3.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
- POL 5210 - Topics in Political Theory (3.0 cr)
- POL 5280 - Topics in Political Theory (3.0 - 4.0 cr)

**Comparative Government**

Take 0 or more credit(s) from the following:

- POL 3410 - Topics in Comparative Politics (3.0 cr)
- POL 3423 - Politics of Disruption: Violence and Its Alternatives [GP] (3.0 cr)
- POL 3431 - Politics of India [GP] (3.0 cr)
- POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 3464 - The Politics of Economic Inequality (3.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3479 - Latin American Politics [GP] (3.0 cr)
- POL 3481H - Comparative Political Economy: Governments and Markets (3.0 cr)
- POL 3482 - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
- POL 4410 - Topics in Comparative Politics (3.0 cr)
- POL 4463 - The Cuban Revolution Through the Words of Cuban Revolutionaries [GP] (3.0 cr)
- POL 4474W - Russian Politics: From Soviet Empire to Post-Soviet State [WI] (3.0 cr)
- POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
- POL 4487 - The Struggle for Democratization and Citizenship (3.0 cr)
- POL 4494W - US-Latin American Relations [WI] (3.0 cr)
- POL 4497 - Patronage & Corruption [GP] (3.0 cr)
- POL 5410 - Topics in Comparative Politics (1.0 - 3.0 cr)
- POL 5477 - Struggles and Issues in the Middle East (4.0 cr)
- POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
  or POL 5403 - Constitutions, Democracy, and Rights: Comparative Perspectives (3.0 cr)
- POL 4461W - European Government and Politics [GP, WI] (3.0 cr)
  or POL 5461 - European Government and Politics (4.0 cr)
- POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
  or POL 5465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
- POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
  or AFRO 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
- POL 4492 - Law and (In)Justice in Latin America (3.0 cr)
  or POL 5492 - Law and (In)Justice in Latin America (3.0 cr)

**American Government**

Take 0 or more credit(s) from the following:

- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- POL 3306 - Presidential Leadership and American Democracy (3.0 cr)
- POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
- POL 3309 - U.S. Supreme Court Decision-Making, Process, and Politics (3.0 cr)
- POL 3310 - Topics in American Politics (3.0 cr)
- POL 3317 - Food Politics: Actors, Arenas, and Agendas [SOCS] (3.0 cr)
- POL 3319 - Education and the American Dream [SOCS, DSJ] (3.0 cr)
• POL 3321 - Issues in American Public Policy (3.0 cr)
• POL 3323 - Political Tolerance in the United States (3.0 cr)
• POL 3325 - U.S. Campaigns and Elections (3.0 cr)
• POL 3329 - The Balance of Power: Federalism & Community in the United States (3.0 cr)
• POL 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
• POL 4310 - Topics in American Politics (3.0 cr)
• POL 4317 - Becoming Stupid: Anti-Science in American Politics (3.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 4771 - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
• POL 4773W - Advocacy Organizations, Social Movements, and the Politics of Identity [DSJ, WI] (3.0 cr)
• POL 5306 - Presidential Leadership and American Democracy (3.0 cr)
• POL 5310 - Topics in American Politics (3.0 cr)
• POL 5322 - Rethinking the Welfare State (3.0 - 4.0 cr)
• POL 5327 - Politics in American Cities and Suburbs (3.0 cr)
• POL 5331 - Thinking Strategically in Domestic Politics (3.0 - 4.0 cr)
• POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr) or AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• POL 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr) or CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr) or POL 5767 - Public Opinion and Voting Behavior (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (3.0 cr) or POL 5315 - State Governments: Laboratories of Democracy (3.0 cr)
• POL 4335 - African American Politics (3.0 cr)
• POL 4502W - The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr) or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr) or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
• POL 4537W - American Political Parties [WI] (4.0 cr) or POL 5737 - American Political Parties (3.0 cr)

International Relations
Take 0 or more credit(s) from the following:
• POL 3810 - Topics in International Relations and Foreign Policy (3.0 cr)
• POL 3835 - International Relations [SOCS, GP] (3.0 cr)
• POL 4810 - Topics in International Politics and Foreign Policy (3.0 cr)
• POL 4881 - The Politics of International Law and Global Governance [GP] (3.0 cr)
• POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)
• POL 4891 - The Politics of Nuclear Weapons (3.0 cr)
• POL 5810 - Topics in International Politics and Foreign Policy (3.0 cr)
• POL 5833 - The United States and the Global Economy (3.0 cr) or POL 5833 - The United States in the Global Economy [US For Econ Policy] (3.0 - 4.0 cr)
• POL 4885W - International Conflict and Security [GP, WI] (3.0 cr) or POL 5885 - International Conflict and Security (3.0 cr)

Additional Courses
Take 0 or more credit(s) from the following:
• POL 3065 - Political Engagement Careers: Planning and Preparing For Your Future [CIV] (3.0 cr)
• POL 4085 - Advanced Political Data Analysis (4.0 cr)
• POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr) or POL 3085H - Honors Course: Quantitative Analysis in Political Science [MATH] (4.0 cr)

Faculty-Supervised
POL 3994 & POL 4994 do not count toward the minor.
Take at most 3 credit(s) from the following:
• POL 3080 - Internship in Politics or Government (3.0 - 13.0 cr)
Population Studies Minor

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may combine the minor in population studies with any other major or minor.

Foundation Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• SOC 3511 - World Population Problems [GP] (3.0 cr)
  or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)

Electives
Electives must be taken from at least two different departments (excluding Advanced Population Studies Elective Options). Students who are interested in graduate programs related to population studies should take an advanced population studies elective option.
Take 4 or more course(s) totaling 12 - 15 credit(s) from the following:

Geography, Environment & Society
Take 0 or more course(s) from the following:
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

History
Take 0 or more course(s) from the following:
• HIST 3011 - Measuring the Past: Quantitative Methods for Historical Research [MATH] (4.0 cr)
• HIST 3411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
• HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
• HIST 3797 - History of Population [SOCS, GP] (3.0 cr)
• AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
  or CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
  or HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)

• Public Affairs
  Take 0 or more course(s) from the following:
  • PA 5301 - Population Methods & Issues for the United States & Global South (3.0 cr)

• Public Health
  Take 0 or more course(s) from the following:
  • PUBH 3351 - Epidemiology: People, Places, and Disease (2.0 cr)

• Sociology
  Take 0 or more course(s) from the following:
  • SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
  • SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
  • SOC 3507 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
  • SOC 4246 - Sociology of Health and Illness (3.0 cr)
  • SOC 4511 - Sociology of Children & Youth (3.0 cr)
  • SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)
    or GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)

• Advanced Population Studies Elective Options
  Students with a GPA of 3.5 or higher, and with instructor and advisor consent, may request permission for a 3-credit 8xxx-level population studies course to count as the Advanced Population Studies Elective. Credit for population studies related internships may be counted toward the minor with approval from the advisor.
  Take 0 - 1 course(s) from the following:
  Population Studies Research Practicum
  Students enrolled in this course will gain hands-on experience with population studies research by working with a researcher or on a research team at the MPC. Students in the course will meet weekly with the instructor to discuss their research experiences and develop a final research product, and students will attend the weekly MPC Seminar Series. Note: Students may petition the instructor to use a relevant non-MPC internship placement to fulfill the hands-on learning component of the course.
  • SOC 4881 - Population Studies Research Practicum (3.0 cr)

• Coursework Options
  • GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
    or GCC 5014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
    or SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
Twin Cities Campus
Portuguese Studies Minor
Spanish & Portuguese Studies
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 40

The Portuguese studies minor focuses on literary, cultural, and linguistic studies from Portugal, Brazil, and Lusophone Africa. Students begin with language skills courses. These are followed by analysis skills courses in Lusophone literature, culture, and linguistics. The department encourages minors to study abroad in a Portuguese-speaking area.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students are required to complete 4 semester(s) of Portuguese with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

Students must declare the minor at least one full term before completing minor requirements and are encouraged to declare it as early as possible (preferably during preparatory coursework). Contact the department office for declaration procedures.

The department administers two allowable degree combinations: Spanish studies BA and Portuguese studies minor, or Spanish studies minor and Portuguese studies minor. No other departmental degree combinations are allowed.

Preparatory Courses
Choose from the following two options: (1) Complete the Portuguese language sequence, or (2) complete the Spanish language sequence and Port 3001. Students may start above Port 1101 or Span 1001 based on language placement.

Take 0 - 5 course(s) totaling 0 - 24 credit(s) from the following:

Option 1
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- PORT 1101 - Beginning Portuguese (5.0 cr)
- PORT 1102 - Beginning Portuguese (5.0 cr)
- PORT 1103 - Intermediate Portuguese (5.0 cr)
- PORT 1104 - Intermediate Portuguese (5.0 cr)

Option 2
Take 0 - 5 course(s) totaling 0 - 24 credit(s) from the following:
- SPAN 1001 - Beginning Spanish (5.0 cr)
- SPAN 1002 - Beginning Spanish (5.0 cr)
  or SPAN 1022 - Alternate Second-Semester Spanish (5.0 cr)
- SPAN 1003 - Intermediate Spanish (5.0 cr)
  or SPAN 1004 - Intermediate Spanish (5.0 cr)
  or SPAN 1014 - Business Spanish (5.0 cr)
  or SPAN 1044 - Intermediate Medical Spanish (5.0 cr)
- PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)

Advanced Language Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- PORT 3003 - Portuguese Conversation and Composition (4.0 cr)

Electives
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- PORT 3501W - Global Portuguese: 1300-1900 [WI] (3.0 cr)
- PORT 3502W - Global Portuguese: 1900-present [WI] (3.0 cr)
- PORT 3910 - Topics in Lusophone Literatures (3.0 cr)
- PORT 3920 [Inactive](3.0 cr)
- PORT 3800 - Film Studies in Portuguese (3.0 cr)
• PORT 5520 - Portuguese Literary and Cultural Studies (3.0 cr)
• PORT 5530 - Brazilian Literary and Cultural Studies (3.0 cr)
• PORT 5540 - Literatures and Cultures of Lusophone Africa (3.0 cr)
• PORT 5910 - Topics in Lusophone Cultures and Literatures (3.0 cr)
• PORT 5930 - Topics in Brazilian Literature (3.0 cr)
Twin Cities Campus
Psychology B.A.

Psychology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 36
- Degree: Bachelor of Arts

Psychology examines human behavior through environmental, genetic, physiological, and social determinants and correlates. The department strives to train students with a strong general background in psychology and an ability to think clearly and critically in a wide variety of settings. Students must fulfill distribution requirements in a variety of psychological topics.

Faculty and students work with related University units, including the Institute of Child Development, the Department of Computer Science and Engineering, the Carlson School of Management, the Departments of Psychiatry and Educational Psychology, the Department of Neuroscience, and affiliated research units within the department, such as the Center for Cognitive Sciences, the Center for Interest Measurement Research, and the Minnesota Center for Twin and Family Research. While a BA in psychology has proved to be a valuable and useful background for a wide variety of careers, a professional career as a psychologist requires further training.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Prospective majors are strongly encouraged to complete PSY 3801 (or a Department of Psychology approved equivalent) prior to formally declaring the major. To declare a major, students first complete the online Declaration Module (https://cla.umn.edu/psychology/undergraduate/majors-minors/declare-your-major) and then schedule an appointment with a Psychology Advisor (psyadvis@umn.edu).

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Psychology BA is PSY.

At least 16 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree in psychology: a BA or a BS or a minor. Students may combine the psychology BA with the child psychology minor, but not with the child psychology BA or BS.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Major Courses
Take 36 or more total credits including: Foundation Courses, Distribution Area Courses, Senior Project and any Electives needed to reach the minimum 36 credits in Psychology coursework. 3 Foundation Courses, 5 Distribution Area Courses, and Senior Project are all required.

Foundation Courses
Take 3 of the following courses.

**PSY 1001** - Introduction to Psychology [SOCS] (4.0 cr)

*or PSY 1001H* - Honors Introduction to Psychology [SOCS] (4.0 cr)

**PSY 3801** - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)

*or PSY 3801H* - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)

**PSY 3001W** - Introduction to Research Methods [WI] (4.0 cr)

*or PSY 3001V* - Honors Introduction to Research Methods [WI] (4.0 cr)

**Distribution Area Courses**

Students are required to take at least five courses from the Distribution Area Courses. Students should take additional Psychology courses from the Distribution Areas lists or the list of "Additional Elective Options" to reach the 36 credit minimum for the major.

Take 5 or more course(s) from the following:

**Distribution Area A: Cognitive and Brain Sciences**

Take 2 or more course(s) from the following:

- **PSY 3011** - Introduction to Learning and Behavior (3.0 cr)
- **PSY 3031** - Introduction to Sensation and Perception (3.0 cr)
- **PSY 3051** - Introduction to Cognitive Psychology (3.0 cr)
- **PSY 3061** - Introduction to Biological Psychology (3.0 cr)
- **PSY 4021** - Creativity Sciences: Minds, Brains, and Innovation (3.0 cr)
- **PSY 4032** - Psychology of Music (3.0 cr)
- **PSY 4036** - Perceptual Issues in Visual Impairment (3.0 cr)
- **PSY 5014** - Psychology of Human Learning and Memory (3.0 cr)
- **PSY 5015** - Cognition, Computation, and Brain (3.0 cr)
- **PSY 5018H** - Mathematical Models of Human Behavior (3.0 cr)
- **PSY 5031W** - Perception [WI] (3.0 cr)
- **PSY 5036W** - Computational Vision [WI] (3.0 cr)
- **PSY 5037** - Psychology of Hearing (3.0 cr)
- **PSY 5038W** - Introduction to Neural Networks [WI] (3.0 cr)
- **PSY 5054** - Psychology of Language (3.0 cr)
- **PSY 5062** - Cognitive Neuropsychology (3.0 cr)
- **PSY 5063** - Introduction to Functional MRI (3.0 cr)
- **PSY 5064** - Brain and Emotion (3.0 cr)
- **PSY 5065** - Functional Imaging: Hands-on Training (3.0 cr)
- **PSY 5066** - Neuroscience, Philosophy and Ethics (3.0 cr)
- **PSY 4011** - Applied Behavior Analysis (3.0 cr)

*or PSY 5011* - Applied Behavior Analysis (4.0 cr)

**Distribution Area B: Clinical, Personality, and Social**

Take 2 or more course(s) from the following:

- **CPSY 3301** - Introduction to Child Psychology [SOCS] (4.0 cr)
- **CPSY 4303** - Adolescent Psychology (3.0 cr)
- **PSY 3101** - Introduction to Personality (3.0 cr)
- **PSY 3201** - Introduction to Social Psychology (3.0 cr)
- **PSY 3206** - Introduction to Health Psychology (3.0 cr)
- **PSY 3301** - Introduction to Cultural Psychology (3.0 cr)
- **PSY 3604** - Introduction to Abnormal Psychology (3.0 cr)
- **PSY 3617** - Introduction to Clinical Psychology (3.0 cr)
- **PSY 3633** - Happiness: Integrating Research Across Psychological Sciences (3.0 cr)
- **PSY 3666** - Human Sexuality (3.0 cr)
- **PSY 5101** - Personality: Current Theory and Research (3.0 cr)
- **PSY 5202** - Attitudes and Social Behavior (3.0 cr)
- **PSY 5204** - Psychology of Interpersonal Relationships (3.0 cr)
- **PSY 5205** - Applied Social Psychology (3.0 cr)
- **PSY 4207** - Personality and Social Behavior (3.0 cr)

*or PSY 5207* - Personality and Social Behavior (3.0 cr)

**Distribution Area C: Individual Differences, Quantitative, and Applied**

Take 1 or more course(s) from the following:

- **PSY 3121** - History and Systems of Psychology (3.0 cr)
- **PSY 3511** - Introduction to Counseling Psychology (3.0 cr)
- **PSY 3711** - Psychology in the Workplace (3.0 cr)
- **PSY 4501** - Psychology of Women and Gender (3.0 cr)
- **PSY 4521** - Psychology of Stress and Trauma (3.0 cr)
- **PSY 5136** - Human Abilities (3.0 cr)
- **PSY 5137** - Introduction to Behavioral Genetics (3.0 cr)
• PSY 5138 - Adult Development and Aging (3.0 cr)
• PSY 5501 - Vocational and Occupational Health Psychology (3.0 cr)
• PSY 5707 [Inactive] (4.0 cr)
• PSY 5708 - Organizational Psychology (3.0 cr)
• PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
• PSY 5865 - Advanced Psychological and Educational Measurement (4.0 cr)
• PSY 3135 - Introduction to Individual Differences (3.0 cr)
or PSY 5135 - Psychology of Individual Differences (3.0 cr)

• Additional Elective Options
Students may count up to 6 combined credits of PSY 3960/4960/5960, 3993, 4993/5993, 3996 and 4996H; OR up to 9 combined credits of PSY 4993/5993 toward this sub-requirement.

Take at most 6 credit(s) from the following:
• PSY 3960 - Undergraduate Seminar in Psychology (1.0 - 5.0 cr)
• PSY 3896 - Internship in Psychology (1.0 - 4.0 cr)
• PSY 3993 - Directed Study (1.0 - 6.0 cr)
• PSY 3996 - Undergraduate Fieldwork and Internship in Psychology (1.0 - 4.0 cr)
• PSY 4960 - Seminar in Psychology (1.0 - 4.0 cr)
• PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
• PSY 4996H - Honors Internship/Externship (1.0 - 6.0 cr)
• PSY 5960 - Topics in Psychology (1.0 - 4.0 cr)
• PSY 5993 - Research Laboratory in Psychology (3.0 cr)
or Take at most 9 credit(s) from the following:
• PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
• PSY 5993 - Research Laboratory in Psychology (3.0 cr)

Capstone
Students demonstrate analytic skills and an understanding of the modes of inquiry common to psychology. The course synthesizes knowledge gained over the program of study.

Students who double major and choose to complete the capstone requirement in their other major may waive the Psychology BA capstone, but they do need to replace the 3 credits with additional electives from the major.

General Sequence
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• PSY 3901W - Major Project - Research Laboratory [WI] (3.0 cr)
• PSY 3902W - Major Project - Individual Interests [WI] (3.0 cr)
• PSY 3903W - Major Project - Community Engagement [WI] (3.0 cr)
or Honors Sequence
Students who fulfill the Capstone requirement with PSY 4902V must take PSY 4994V as a prerequisite. PSY 4994V is typically taken in the Spring semester of Junior year. Students should plan this sequence with Psychology Advising and Psychology Honors faculty. Students must enroll in PSY 4902V for a minimum of 3, but no more than 6 credits.

Take exactly 2 course(s) totaling 7 - 10 credit(s) from the following:
• PSY 4994V - Honors Research Practicum [WI] (4.0 cr)
• PSY 4902V - Honors Project [WI] (1.0 - 6.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
• PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
• PSY 3901W - Major Project - Research Laboratory [WI] (3.0 cr)
• PSY 3902W - Major Project - Individual Interests [WI] (3.0 cr)
• PSY 3903W - Major Project - Community Engagement [WI] (3.0 cr)
• PSY 4902V - Honors Project [WI] (1.0 - 6.0 cr)
• PSY 5031W - Perception [WI] (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
Twin Cities Campus
Psychology B.S.
Psychology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 54 to 61
- Degree: Bachelor of Science

Psychology examines human behavior through environmental, genetic, physiological, and social determinants and correlates. The BS in psychology offers students rigorous scientific training in biological and quantitative psychology, complimented by a broad education in such related fields as neuroscience, cognitive science, computer science, biology, chemistry, and mathematics. This degree is intended to prepare students for graduate work in psychology, as well as in related fields such as cognitive science, neuroscience, and medicine.

The BS degree in psychology emphasizes coursework in biological and quantitative/cognitive sciences. The biological courses are appropriate for students interested primarily in specializations such as the biological basis of psychopathology, the brain-behavior relation, evolutionary psychology, and behavior genetics. The quantitative/cognitive science courses are appropriate for students interested primarily in statistics and methods used in psychological research, in mathematical models of perception and cognition, and in psychological measurement. Students interested in the biological area are encouraged to choose heavily from outside foundation courses in the life sciences (e.g., biochemistry, biology, genetics and cell biology, evolution and behavior), whereas students focusing upon quantitative/cognitive science courses are encouraged to select more outside foundation courses in mathematics and the physical sciences (e.g., computer science, mathematics, physics, statistics).

A psychology BS is a valuable and useful background for a variety of careers and graduate and professional academic programs. A professional career as a psychologist requires further training. Students completing the baccalaureate degree in psychology may not receive a second baccalaureate degree in child psychology.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Prospective majors are strongly encouraged to complete PSY 3801 (or a Department of Psychology approved equivalent transfer course) and two Outside Foundation Courses prior to formally declaring the major.

To declare a major, students first complete the Online Declaration Module (https://cla.umn.edu/psychology/undergraduate/majors-minors/declare-your-major) and then schedule an appointment with a psychology advisor (psyadvis@umn.edu).

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 16 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. 9 credits within the Outside Foundation Courses requirement must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree in psychology: a BA or a BS or a minor. Students may combine the psychology BS with the child psychology minor, but not with the child psychology BA or BS.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Outside Foundation Courses
Take 18 or more credit(s) including 3 or more sub-requirements(s) from the following:

**Philosophy**
Note: All of these courses except PHIL 1001 have prerequisites.

Take 0 - 11 credit(s) from the following:
- PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
- PHIL 3601W - Scientific Thought [WI] (4.0 cr)
- PHIL 3607 - Philosophy of Psychology (4.0 cr)
- PHIL 4607 - Philosophy of the Biological Sciences (3.0 cr)
- PHIL 5201 - Symbolic Logic I (4.0 cr)
- PHIL 5202 - Symbolic Logic II (4.0 cr)
- PHIL 1005 - Scientific Reasoning (4.0 cr)
  or PHIL 1005H (Inactive) (4.0 cr)

**Computer Science/Math**
Note: All of these courses except CSCI 1103 have prerequisites.

Take 0 - 11 credit(s) from the following:
- CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
- CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)

**Physical Science**
Note: All of these courses except CHEM 1015 have prerequisites.

Take 0 - 11 credit(s) from the following:
- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
- PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  with CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  with CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
  or CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
  with CHEM 1085 - Chemistry for the Life Sciences I Laboratory [PHYS] (1.0 cr)
  or CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  with CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
- CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
  with CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
- CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
  with CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
  or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
  or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
  or CHEM 2312H - Honors Organic Lab (5.0 cr)
- PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
- PHYS 1302W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)
  or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

**Biological Science**
Note: All of these courses except ANTH 1001, ANTH 3002/EEB 3002, and BIOL 1001 have prerequisites.

Take 0 - 11 credit(s) from the following:
- ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
- BIOL 1101 - Genetics and Society [CIV] (3.0 cr)
- EEB 3409 - Evolution (3.0 cr)
• NSCI 3505 - Mind and Brain (3.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• PHSL 3050 - Physiology From Cells to Systems (3.0 cr)
• PHSL 3051 - Human Physiology (4.0 cr)
• PHSL 3061 - Principles of Physiology (4.0 cr)
• ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
• ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
or EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• BIOC 3021 - Biochemistry (3.0 cr)
or BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
• BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1001H - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)
• BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
with BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
• BIOL 4003 - Genetics (3.0 cr)
or GCD 4003 - Genetics (3.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
or GCD 3033 - Principles of Cell Biology (3.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
or EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
or EEB 3811W - Introduction to Animal Behavior [WI] (4.0 cr)
• NSCI 2001 - Human Neuroanatomy (without a lab) (3.0 cr)
or NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)

Major Courses
Take 36 or more total credits including: Foundation Courses, Distribution Area Courses, Senior Project and any Electives needed to reach the minimum 36 credits in Psychology coursework. 3 Foundation Courses, 5 Distribution Area Courses, and Senior Project are all required.

Foundation Courses
Take exactly 3 course(s) from the following:
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
• PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

Distribution Area Courses
Students are required to take at least five courses from the Distribution Area Courses. At least one course in Distribution Area courses must be at the 4xxx level or above, excluding: CPSY 4303, PSY 4902V, 4960, 4993, 4994V, 4996H, 5960, & 5993. Students should take additional Psychology courses from the Distribution Areas lists or the list of "Additional Elective Options" to reach the 36 credit minimum for the major.
Take 5 or more course(s) from the following:
Distribution Area A: Cognitive and Brain Sciences
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• PSY 3011 - Introduction to Learning and Behavior (3.0 cr)
• PSY 3031 - Introduction to Sensation and Perception (3.0 cr)
• PSY 3051 - Introduction to Cognitive Psychology (3.0 cr)
• PSY 3061 - Introduction to Biological Psychology (3.0 cr)
• PSY 4021 - Creativity Sciences: Minds, Brains, and Innovation (3.0 cr)
• PSY 4032 - Music of Psychology (3.0 cr)
• PSY 4036 - Perceptual Issues in Visual Impairment (3.0 cr)
• PSY 5014 - Psychology of Human Learning and Memory (3.0 cr)
• PSY 5015 - Cognition, Computation, and Brain (3.0 cr)
• PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
• PSY 5031W - Perception [WI] (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5037 - Psychology of Hearing (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
• PSY 5054 - Psychology of Language (3.0 cr)
• PSY 5062 - Cognitive Neuropsychology (3.0 cr)
• PSY 5063 - Introduction to Functional MRI (3.0 cr)
• PSY 5064 - Brain and Emotion (3.0 cr)
• PSY 5065 - Functional Imaging: Hands-on Training (3.0 cr)
• PSY 5066 - Neuroscience, Philosophy and Ethics (3.0 cr)
• PSY 4011 - Applied Behavior Analysis (3.0 cr) or PSY 5011 - Applied Behavior Analysis (3.0 cr)
• PSY 4016 - Behavior Analysis and Autism (4.0 cr) or PSY 5016 - Behavior Analysis and Autism (4.0 cr)

• Distribution Area B: Clinical, Personality, and Social
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• CPSY 4303 - Adolescent Psychology (3.0 cr)
• PSY 3201 - Introduction to Social Psychology (3.0 cr)
• PSY 3206 - Introduction to Health Psychology (3.0 cr)
• PSY 3301 - Introduction to Cultural Psychology (3.0 cr)
• PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
• PSY 3617 - Introduction to Clinical Psychology (3.0 cr)
• PSY 3633 - Happiness: Integrating Research Across Psychological Sciences (3.0 cr)
• PSY 3666 - Human Sexuality (3.0 cr)
• PSY 5202 - Attitudes and Social Behavior (3.0 cr)
• PSY 5204 - Psychology of Interpersonal Relationships (3.0 cr)
• PSY 5205 - Applied Social Psychology (3.0 cr)
• PSY 3101 - Introduction to Personality (3.0 cr)
• PSY 5101 - Personality: Current Theory and Research (3.0 cr)
• PSY 4207 - Personality and Social Behavior (3.0 cr) or PSY 5207 - Personality and Social Behavior (3.0 cr)
• CPSY 3301 - Introduction to Child Psychology [SOCS] (4.0 cr)

• Distribution Area C: Individual Differences, Quantitative, and Applied
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• PSY 3121 - History and Systems of Psychology (3.0 cr)
• PSY 3511 - Introduction to Counseling Psychology (3.0 cr)
• PSY 3711 - Psychology in the Workplace (3.0 cr)
• PSY 4501 - Psychology of Women and Gender (3.0 cr)
• PSY 4521 - Psychology of Stress and Trauma (3.0 cr)
• PSY 5136 - Human Abilities (3.0 cr)
• PSY 5137 - Introduction to Behavioral Genetics (3.0 cr)
• PSY 5138 - Adult Development and Aging (3.0 cr)
• PSY 5501 - Vocational and Occupational Health Psychology (3.0 cr)
• PSY 5707 [Inactive] (4.0 cr)
• PSY 5708 - Organizational Psychology (3.0 cr)
• PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
• PSY 5865 - Advanced Psychological and Educational Measurement (4.0 cr)
• PSY 3135 - Introduction to Individual Differences (3.0 cr) or PSY 5135 - Psychology of Individual Differences (3.0 cr)

• Additional Elective Options
Take 0 or more course(s) from the following:
Take at most 3 credit(s) from the following:
• PSY 3960 - Undergraduate Seminar in Psychology (1.0 - 5.0 cr)
• PSY 3996 - Internship in Psychology (1.0 - 4.0 cr)
• PSY 3993 - Directed Study (1.0 - 6.0 cr)
• PSY 3996 - Undergraduate Fieldwork and Internship in Psychology (1.0 - 4.0 cr)
• PSY 4960 - Seminar in Psychology (1.0 - 4.0 cr)
• PSY 4996H - Honors Internship/Externship (1.0 - 6.0 cr)
• PSY 5960 - Topics in Psychology (1.0 - 4.0 cr)

Students may count up to 6 credits of PSY 4993/5993 toward the electives sub-requirement. An additional 3 credits of PSY 4993/5993 is required for the senior project.
Take at most 6 credit(s) from the following:
• PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
• PSY 5993 - Research Laboratory in Psychology (3.0 cr)

Capstone
Students demonstrate analytic skills and an understanding of the modes of inquiry common to psychology. The capstone synthesizes knowledge gained over the program of study.

Students who double major and choose to complete the capstone requirement in their other major are still required to take the Psychology BS capstone.
General Sequence
Take PSY 4993 or 5993 one semester prior to, or concurrent with PSY 3901W.
Take exactly 2 course(s) totaling 6 or more credit(s) from the following:
• PSY 3901W - Major Project - Research Laboratory [WI] (3.0 cr)
• PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
  or PSY 5993 - Research Laboratory in Psychology (3.0 cr)

or Honors Sequence
Students who fulfill the Capstone requirement with PSY 4902V must take PSY 4994V as a prerequisite. PSY 4994V is typically taken in the Spring semester of Junior year. Students should plan this sequence with Psychology Advising and Psychology Honors faculty. Students must enroll in PSY 4902V for a minimum of 3, but no more than 6 credits.
Take exactly 2 course(s) totaling 7 - 10 credit(s) from the following:
• PSY 4994V - Honors Research Practicum [WI] (4.0 cr)
• PSY 4902V - Honors Project [WI] (1.0 - 6.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
• PSY 3901W - Major Project - Research Laboratory [WI] (3.0 cr)
• PSY 3902W - Major Project - Individual Interests [WI] (3.0 cr)
• PSY 4902V - Honors Project [WI] (1.0 - 6.0 cr)
• PSY 4994V - Honors Research Practicum [WI] (4.0 cr)
• PSY 5031W - Perception [WI] (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
Twin Cities Campus
Psychology Minor
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 21

The undergraduate minor in psychology offers students an empirical foundation in the discipline, along with the opportunity to construct an area of emphasis or to explore a broad sampling of the Department of Psychology's distribution areas.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Prospective minors are strongly encouraged to complete PSY 3801 (or a Department of Psychology approved equivalent) prior to formally declaring the minor.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
Courses without a PSY designator, or transfer courses may be approved to fulfill minor requirements with specific approval of Psychology Undergraduate Advising.

At least 9 upper-division credits in the minor must be taken at the University of Minnesota - Twin Cities campus

Students may earn no more than one undergraduate degree in psychology: a BA, or a BS, or a minor (including health psychology minor). Students may combine the psychology minor with the BA or the BS in child psychology, but not both.

Note: declaring the minor does not guarantee admittance into required courses. Students are responsible for securing a seat in required courses.

Foundation Courses
Take exactly 3 course(s) from the following:
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
  or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
• PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
  or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
  or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

Upper-Division Electives
Recommended options for structuring the elective coursework include: 1) sampling from each of the domains; or 2) selection of a focus area, including a 3xx course followed by advanced coursework in that sub-area of the discipline.

Take exactly 3 course(s) totaling 9 or more credit(s) from the following:

Distribution Area A: Cognitive and Brain Sciences
Take 0 or more course(s) from the following:
• PSY 3011 - Introduction to Learning and Behavior (3.0 cr)
• PSY 3031 - Introduction to Sensation and Perception (3.0 cr)
• PSY 3051 - Introduction to Cognitive Psychology (3.0 cr)
• PSY 3061 - Introduction to Biological Psychology (3.0 cr)
• PSY 4021 - Creativity Sciences: Minds, Brains, and Innovation (3.0 cr)
• PSY 4032 - Psychology of Music (3.0 cr)
• PSY 4036 - Perceptual Issues in Visual Impairment (3.0 cr)
• PSY 5014 - Psychology of Human Learning and Memory (3.0 cr)
• PSY 5015 - Cognition, Computation, and Brain (3.0 cr)
• PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
• PSY 5031W - Perception [WI] (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5037 - Psychology of Hearing (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
• PSY 5054 - Psychology of Language (3.0 cr)
• PSY 5062 - Cognitive Neuropsychology (3.0 cr)
• PSY 5063 - Introduction to Functional MRI (3.0 cr)
• PSY 5064 - Brain and Emotion (3.0 cr)
• PSY 5065 - Functional Imaging: Hands-on Training (3.0 cr)
• PSY 5066 - Neuroscience, Philosophy and Ethics (3.0 cr)
• PSY 4011 - Applied Behavior Analysis (3.0 cr)
  or PSY 5011 - Applied Behavior Analysis (3.0 cr)
• PSY 4016 - Behavior Analysis and Autism (4.0 cr)
  or PSY 5016 - Behavior Analysis and Autism (4.0 cr)
• Distribution Area B: Clinical, Personality, and Social
  Take 0 or more course(s) from the following:
  • PSY 3101 - Introduction to Personality (3.0 cr)
  • PSY 3201 - Introduction to Social Psychology (3.0 cr)
  • PSY 3206 - Introduction to Health Psychology (3.0 cr)
  • PSY 3301 - Introduction to Cultural Psychology (3.0 cr)
  • PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
  • PSY 3617 - Introduction to Clinical Psychology (3.0 cr)
  • PSY 3633 - Happiness: Integrating Research Across Psychological Sciences (3.0 cr)
  • PSY 3666 - Human Sexuality (3.0 cr)
  • PSY 5101 - Personality: Current Theory and Research (3.0 cr)
  • PSY 5202 - Attitudes and Social Behavior (3.0 cr)
  • PSY 5204 - Psychology of Interpersonal Relationships (3.0 cr)
  • PSY 5205 - Applied Social Psychology (3.0 cr)
  • PSY 4207 - Personality and Social Behavior (3.0 cr)
  or PSY 5207 - Personality and Social Behavior (3.0 cr)
• Distribution Area C: Individual Differences, Quantitative, and Applied
  Take 0 or more course(s) from the following:
  • PSY 3121 - History and Systems of Psychology (3.0 cr)
  • PSY 3511 - Introduction to Counseling Psychology (3.0 cr)
  • PSY 3711 - Psychology in the Workplace (3.0 cr)
  • PSY 4501 - Psychology of Women and Gender (3.0 cr)
  • PSY 4521 - Psychology of Stress and Trauma (3.0 cr)
  • PSY 5136 - Human Abilities (3.0 cr)
  • PSY 5137 - Introduction to Behavioral Genetics (3.0 cr)
  • PSY 5138 - Adult Development and Aging (3.0 cr)
  • PSY 5501 - Vocational and Behavioral Health Psychology (3.0 cr)
  • PSY 5707 (Inactive) (4.0 cr)
  • PSY 5708 - Organizational Psychology (3.0 cr)
  • PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
  • PSY 5885 - Advanced Psychological and Educational Measurement (4.0 cr)
  • PSY 3135 - Introduction to Individual Differences (3.0 cr)
  or PSY 5135 - Psychology of Individual Differences (3.0 cr)
Twin Cities Campus
Public Health Minor
Geography, Environment, Society, Sociology
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 14 to 16

Protecting the public’s health requires addressing challenges that are influenced as much by individual and social behavior as they are by biology, chemistry, and physics. Biology, the environment, social and political systems, technology, and more intersect to describe the methods of protecting the health and well-being of the population. Liberal arts students, and students from other colleges who complement their major degree programs with a public health minor, will understand how to help society by improving health and preventing disease on a population level.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Transfer coursework from outside the UMN-TC must be reviewed and approved by the Public Health Advisory Board.

Students may combine the minor in public health with any other major or minor.

Introduction to the Discipline
PUBH 3004 satisfies both Part I of this minor requirement and also the Applying Public Health Theory requirement. Take exactly 2 course(s) totaling 4 - 6 credit(s) from the following:

Part I

• PUBH 3001 - Personal and Community Health (2.0 cr)
• PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
• PUBH 3202 - What is Public Health? (2.0 cr)

• Part II

• PUBH 3106 - Making Sense of Health Studies (2.0 cr)
• PUBH 3351 - Epidemiology: People, Places, and Disease (2.0 cr)

Understanding Health Issues From Varying Social Scientific Contexts
Take 6 or more credit(s) from the following:

• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
• CSCS 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 3401W - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
• GWSS 3218 - Politics of Reproduction (3.0 cr)
• HIST 3417W - Food in History [HIS, ENV, WI] (3.0 cr)
• HIST 3418 - Drink in History [HIS] (3.0 cr)
• JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
• JOUR 5541 - Mass Communication and Public Health (3.0 cr)
• JOUR 5542 - Theory-based Health Message Design (3.0 cr)
• PHIL 3305 - Medical Ethics (4.0 cr)
• POL 3317 - Food Politics: Actors, Arenas, and Agendas [SOCS] (3.0 cr)
• PSY 3206 - Introduction to Health Psychology (3.0 cr)
• PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
• PSY 3666 - Human Sexuality (3.0 cr)
• PSY 4016 - Behavior Analysis and Autism (4.0 cr)
• PSY 5205 - Applied Social Psychology (3.0 cr)
• SOC 3241 - Sociology of Women’s Health: Experiences from Around the World (3.0 cr)
• SOC 3446 - Comparing Healthcare Systems [GP] (3.0 cr)
• SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  or GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
  or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
  or SOC 5246 - Disease, Disasters, and Other Killers [HIS, ENV] (3.0 cr)
• SOC 3511 - World Population Problems [GP] (3.0 cr)
  or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
  or SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)

Applying Public Health Theory

PUBH 3004 satisfies both this minor requirement and also the Introduction to the Discipline requirement.

Take 2 or more credit(s) from the following:
• HSM 3040 - Dying and Death in Contemporary Society: Implications for Intervention (2.0 cr)
• PUBH 3003 - Fundamentals of Alcohol and Drug Abuse (2.0 cr)
• PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
• PUBH 3010 - Public Health Approaches to HIV/AIDS (2.0 cr)
• PUBH 3102 - Issues in Environmental and Occupational Health (3.0 cr)
• PUBH 3104 - Environmental Health Effects: Introduction to Toxicology (2.0 cr)
• PUBH 3212 - Infectious Disease Outbreaks: Review of Public Health Investigation, Response, & Prevention Strategy (2.0 cr)
• PUBH 3415 - Introduction to Clinical Trials - Online (3.0 cr)
• PUBH 3801 - Health Economics and Policy (3.0 cr)
• PUBH 3905 - Nutrition for Public Health Promotion and Disease Prevention (2.0 cr)
• PUBH 3954 - Personal, Social, and Environmental Influences on the Weight-Related Health of Pediatric Populations (2.0 cr)
• PUBH 4410 (Inactive) (4.0 cr)

Global Impact

Both Global Impact courses carry a prerequisite chosen from the "Introduction to the Discipline" course list above.

PUBH 3107 - Global Public Health and the Environment (2.0 cr)
  or PUBH 3601 - Maternal and Child Health Global Public Health Issues (2.0 cr)
**Twin Cities Campus**

**Religious Studies B.A.**  
*Classical & Near Eastern Studies*  
**College of Liberal Arts**

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2020  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 31 to 50  
- Degree: Bachelor of Arts

Students in religious studies are trained in the critical study of religious thought, practice, institutions, and communities throughout the world and across time periods. The subject of religion is by its very nature interdisciplinary, attracting interest from many perspectives, including textual and literary studies, history, sociology, anthropology, the arts, and philosophy.

Students in the religious studies program select one of two tracks. The "religion, culture, and society" track is designed for students who seek to study religious traditions broadly or comparatively. The "texts and traditions" track is for students who seek to study a single tradition deeply, reading its foundational texts in their original language. Both tracks examine religion as a social and cultural force affecting fundamental issues of our world. All majors take courses in at least two religious traditions and develop an interdisciplinary concentration area consisting of four courses, selected from a variety of departments and focused on a theme, tradition, time period, location, practice, or set of questions. The area of concentration must be approved by the major advisor.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students in Track II are required to complete 4 semester(s) of language connected to their area of concentration, with a grade of C- or better, or demonstrate proficiency in the language(s) as defined by the department or college. Students in Track I do not have a language requirement that is specific to the major. Students in Track I are required to complete 4 semester(s) of any language, with a grade of C-, or S, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Religious Studies BA is RELS.

At least 12 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus. This includes learning abroad courses taken for resident credit.

Students may earn a BA or a minor in religious studies, but not both.

The following restrictions apply to students also completing a major in Jewish studies, biblical studies, or history: (1) the subjects of the courses selected to fulfill the area concentration requirement must be well outside of the focus of the other major in question; (2) the chosen sub-plan should include a comparative element that distinguishes it from the other major.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Preparatory Courses**

The preparatory course ensures that students are introduced to the academic study of religion and understand how it is different from what they may have experienced in their own families or religious institutions. Courses that do not appear on this list may be accepted.
with prior consent by the major adviser.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- RELS 1001 - Introduction to the Religions of the World [GP] (3.0 cr)
- RELS 1002 - Contemporary Issues in Religion, Culture, and Society: An Introduction to Religion [AH] (3.0 cr)
- AMST 1011 [Inactive][CIV] (3.0 cr)
  or RELS 1011 [Inactive][CIV] (3.0 cr)
- JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- CNES 1082 - Jesus in History [HIS] (3.0 cr)
  or RELS 1082 - Jesus in History [HIS] (3.0 cr)
- CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- JWST 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)

Theory and Method in Religion
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- RELS 3001W - Theory and Method in Religion: Critical Approaches to the Study of Religion [WI] (3.0 cr)
  or RELS 5001 - Theory and Method in the Study of Religion: Critical Approaches to the Study of Religion (3.0 cr)

Electives
All electives must be approved by the advisor prior to inclusion in the program. The number of credits required for this requirement depends on a student's sub-plan. See further instructions for both tracks below in the Sub-plans requirements section.

Track I: Religion, Culture and Society
Take exactly 8 courses for at least 24 credits.
Area concentration: Four of the courses must focus on a specific area of concentration selected in consultation with the major advisor.
Religious Traditions Breadth: Two of the courses must focus on two different religious traditions, which are also different from the area concentration.
Contexts of Religions: The remaining two courses can be any from this list.

Track II: Texts and Traditions
Take exactly 6 courses for at least 18 credits.
Area concentration: Four of the courses must focus on a specific area of concentration, typically a specific religious tradition, selected in consultation with the major advisor.
Religious Traditions Breadth: Two of the courses must focus on two different religious traditions, which are also different from the area concentration. The area of concentration must be related to the language chosen within the sub-plan.
Take 6 - 8 course(s) totaling 18 or more credit(s) from the following:

- RELS 3626W - Witches, Seers, and Saints: Women, Gender, and Religion in the U.S. [WI] (3.0 cr)
- RELS 3970 - Supplemental Discussion in Religious Studies (1.0 cr)
- RELS 3993 - Directed Studies (1.0 - 4.0 cr)
- RELS 5504 - Development of Israelite Religion II (3.0 cr)
- RELS 5993 - Directed Studies (1.0 - 4.0 cr)
- RELS 8190 - Comparative Seminar in Religions in Antiquity (3.0 cr)
- RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- RELS 3070 - Topics in Religious Studies (3.0 cr)
  or RELS 5070 - Topics in Religious Studies (3.0 cr)
- RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
- RELS 3076 - The Apostle Paul: Life, Letters, and Legacy (3.0 cr)
  or RELS 5076 - Apostle Paul: Life, Letters, and Legacy (3.0 cr)
- RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
  or HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
- RELS 3092 - Jesus in History [HIS] (3.0 cr)
or CNES 3092 - Jesus in History [HIS] (3.0 cr)
or HIST 3092 - Jesus in History [HIS] (3.0 cr)
• RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or HIST 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or HIST 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or RELS 3204 [Inactive] (3.0 cr)
or RELS 5204 - The Dead Sea Scrolls (3.0 cr)
or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
or JWST 5204 - The Dead Sea Scrolls (3.0 cr)
or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or AMTH 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or RELS 3322 [Inactive] [AH] (3.0 cr)
or RELS 3322 - Asian Art [AH] (3.0 cr)
or AMTH 3205 - Asian Art [AH] (3.0 cr)
or RELS 3371 - Buddhism [GP] (3.0 cr)
or CNES 3672 - Buddhism [GP] (3.0 cr)
or RELS 3372 [Inactive] [AH] (3.0 cr)
or AMTH 3001 - Reading Asian Cultures (3.0 cr)
or RELS 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
or CNES 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
or HIST 3466 - Religion and Society in Imperial China [HIS] (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or CNES 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or RELS 3315W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 3314W - Art of India [AH, GP, WI] (4.0 cr)
or AMTH 3314W - Art of India [AH, GP, WI] (4.0 cr)
or RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
or RELS 3520 - History of the Holocaust (3.0 cr)
or HIST 3727 - History of the Holocaust (3.0 cr)
or JWST 3520 - History of the Holocaust (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3541 [Inactive] (3.0 cr)
or CNES 3108 [Inactive] (3.0 cr)
or RELS 3543 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or CNES 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or RELS 3544W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
or HIST 3081W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
or RELS 3545 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
or HIST 3082 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
or RELS 3611 - Eastern Orthodoxy: History and Culture (3.0 cr)
or HIST 3767 - Eastern Orthodoxy: History and Culture (3.0 cr)
or RELS 3612 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or RELS 5612 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
or HIST 3623W - The Age of Reformation [WI] (3.0 cr)
or RELS 3621W [Inactive] [WI] (3.0 cr)
or RELS 5621W [Inactive] [WI] (3.0 cr)
• RELS 3622 - 'Sinners, Saints, and Savages': Religion in Early America (3.0 cr)
or HIST 3802 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
• RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
or HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
or SOC 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
• RELS 3625 - Magic and Medicine (3.0 cr)
or HIST 3285 - Magic and Medicine (3.0 cr)
• RELS 3627 - The End of the World in Literature and History [HIS] (3.0 cr)
or ENGL 3025 - The End of the World in Literature and History [HIS] (3.0 cr)
• RELS 3671 - Hinduism (3.0 cr)
or RELS 5671 [Inactive] (3.0 cr)
or AMES 3671 - Hinduism (3.0 cr)
or AMES 5671 [Inactive] (3.0 cr)
or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or AMES 3872 - The Cultures of the Silk Road (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
• RELS 3709 [Inactive] (3.0 cr)
or HIST 3503 [Inactive] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
or GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
• RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or AMES 3871 - Islam: Religion and Culture (3.0 cr)
or RELS 3713 [Inactive] (3.0 cr)
or HIST 3506 [Inactive] (3.0 cr)
• RELS 3714 - Islam and the West (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or GLOS 3643 - Islam and the West (3.0 cr)
• RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
or HIST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
or MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
• RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
or HIST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
• RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
• RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 5513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• RELS 3722 - The Ottoman Empire [HIS, GP] (3.0 cr)
or HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
• RELS 4049 - Religion and Culture (3.0 cr)
or ANTH 4049 - Religion and Culture (3.0 cr)
• RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
or SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
or RELS 5513W [Inactive] [WI] (3.0 cr)
or CNES 5513W [Inactive] [WI] (3.0 cr)
or JWST 5513W [Inactive] [WI] (3.0 cr)
or HIST 5614 - The Medieval Church (3.0 cr)
• RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
or ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
Capstone
The capstone gives majors the opportunity to research a specific topic in greater depth than is possible in a normal semester. Students should select a topic that relates to their area concentration. Students in the Text and Traditions option should include a language/translation component in their project. Projects are developed independently under supervision of a faculty advisor selected by the student.

The program strongly recommends that students complete RELS 3001W at least one semester before enrolling in RELS 4952. Enroll in RELS 4952 for 4 credits, or enroll in RELS 4952 concurrent with an advisor-approved upper-division course for a combined 4 credits. Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Religious Studies BA capstone, but they do need to replace the 3 credits with another upper-division RELS elective.

Take 1 - 2 course(s) totaling exactly 4 credit(s) from the following:

- RELS 4952 (4.0 cr)
- RELS 4952 - Capstone (1.0 - 4.0 cr)
- or RELS 4952 (1.0 cr) + Advisor-approved Upper-Division Course (3.0 cr)
- RELS 4952 - Capstone (1.0 - 4.0 cr) with advisor-approved upper-division course (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- RELS 3001W - Theory and Method in Religion: Critical Approaches to the Study of Religion [WI] (3.0 cr)
- RELS 3626W - Witches, Seers, and Saints: Women, Gender, and Religion in the U.S. [WI] (3.0 cr)
- RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- or RELS 3621W [Inactive] [WI] (3.0 cr)
- or RELS 5621W [Inactive] [WI] (3.0 cr)
- or RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
- or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
- or RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
- or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
- or ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
- or ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Track I: Religion, Culture, and Society
This track is designed to meet the needs of students who wish to study religion broadly and pursue a highly contextualized investigation of religion as a social and cultural force. It serves students who are drawn to the methodologies of the humanities, social sciences, and the arts. It serves students who are motivated by questions of expression, psychology, religious thought and practice, as well as public and social policy, and the political contexts and ramifications of religion. It prepares students for many careers serving diverse communities in public arenas, as well as for graduate study in the arts, humanities, or social sciences.

Students in this sub-plan have developed concentrations in many areas, including religion, human rights, and social justice; religion and gender; religion and politics in the U.S.; religion and art, religion in the U.S.; Muslim, Christian, and Jewish relations; religious violence, and many others. Students should consult with the major advisor as they develop their concentration.

This sub-plan is completed by taking 8 Electives within the core of the major, see instructions above. Final clearance by the major advisor is required.

Track II: Texts and Traditions
This track is designed for students interested in gaining in-depth knowledge of a particular religious tradition by studying the untranslated foundational texts of the chosen tradition. This track prepares students for many careers serving diverse communities in public arenas, as well as for graduate study in a variety of fields or seminary programs. It is particularly recommended for students seeking in depth study of Judaism, Islam, or Christianity; or the study of the traditions and texts of the religions of South or East Asia, whether in their countries of origin or in diaspora.

This track requires that students gain proficiency in a language appropriate to the specific religious tradition and its sources. Students must complete at least one course at the fourth semester or beyond with a grade of C- or better. Language selection must be approved by the major advisor. Sample pairings include, but are not limited to, the following:
American Indian religions: Ojibwe or Dakota
Religions of Asia: Chinese, Japanese, Sanskrit*, Hindi, Urdu
Christianity: Greek or Latin (for scriptural or medieval concentration), German or Spanish (for relevant geographical/cultural themes)
Islam: Arabic, Persian*, Turkish*
Judaism: Hebrew (for scriptural or historical area of concentration), German or Yiddish* (e.g., for Jewish literature or 20th-century)

*Sanskrit, Persian, Turkish, and Yiddish are not taught on campus, but they are available through CourseShare. Contact the CLA Language Center for more information.

This sub-plan is completed by taking 6 Electives within the core of the major, and fulfilling the language proficiency requirement below. Final clearance by the major advisor is required.

**Language Proficiency**
The amount of credits required for this requirement will depend on a student's placement in the language tied to the Area Concentration.
Take 1 - 4 course(s) totaling 3 - 22 credit(s) from the following:
•Fourth semester language or higher (at least 3 cr)
Twin Cities Campus
Religious Studies Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15

The minor in religious studies allows those in other majors to participate in the critical study of religion.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
At least 3 courses in the minor must be taken at the University of Minnesota - Twin Cities campus. This includes learning abroad courses taken for resident credit.

Students may earn a BA or a minor in religious studies, but not both.

Theory and Method in Religion
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• RELS 3001W - Theory and Method in Religion: Critical Approaches to the Study of Religion [WI] (3.0 cr)
  or RELS 5001 - Theory and Method in the Study of Religion: Critical Approaches to the Study of Religion (3.0 cr)
  or Other course approved by the director of undergraduate studies.

Electives
The purpose of the minor is to expose students to a diversity of religious traditions and methods of study. At least two traditions must be represented among the four elective courses. Elective courses should be selected in consultation with the DUS in order to ensure completion of the minor.

Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
• RELS 3626W - Witches, Seers, and Saints: Women, Gender, and Religion in the U.S. [WI] (3.0 cr)
• RELS 3970 - Supplemental Discussion in Religious Studies (1.0 cr)
• RELS 3993 - Directed Studies (1.0 - 4.0 cr)
• RELS 4952 - Capstone (1.0 - 4.0 cr)
• RELS 5504 - Development of Israelite Religion II (3.0 cr)
• RELS 5993 - Directed Studies (1.0 - 4.0 cr)
• RELS 8190 - Comparative Seminar in Religions in Antiquity (3.0 cr)
• HIST 3623W - The Age of Reformation [WI] (3.0 cr)
• RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• RELS 3070 - Topics in Religious Studies (3.0 cr)
  or RELS 5070 - Topics in Religious Studies (3.0 cr)
• RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
• CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
• RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
  or RELS 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
• RELS 3076 - The Apostle Paul: Life, Letters, and Legacy (3.0 cr)
  or CNES 3076 - Apostle Paul: Life, Letters, and Legacy (3.0 cr)
• RELS 3079 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
  or HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
• RELS 3092 - Jesus in History [HIS] (3.0 cr)
  or CNES 3092 - Jesus in History [HIS] (3.0 cr)
• RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
  or HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
• RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
  or CNES 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
  or RELS 3204 [Inactive] (3.0 cr)
  or CNES 3204 [Inactive] (3.0 cr)
  or JWST 3204 - Bible: Prophecy in Ancient Israel (3.0 cr)
• RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
  or CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
  or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• RELS 3321 - Buddhism [GP] (3.0 cr)
  or AMES 3672 - Buddhism [GP] (3.0 cr)
  or JWST 3321 - Buddhism (3.0 cr)
• RELS 3322 [Inactive] [AH] (3.0 cr)
  or ARTH 3322 [Inactive] [AH] (3.0 cr)
  or RELS 3323 [Inactive] (3.0 cr)
• RELS 3371 - Buddhism [GP] (3.0 cr)
  or AMES 3371 - Buddhism (3.0 cr)
  or MES 3371 - Buddhism (3.0 cr)
• RELS 3372 [Inactive] (3.0 cr)
  or CNES 3301 - Reading Asian Cultures (3.0 cr)
• RELS 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
  or AMES 3373 - Religion and Society in Imperial China [HIS] (3.0 cr)
  or HIST 3466 - Religion and Society in Imperial China [HIS] (3.0 cr)
• RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
  or AMES 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
• RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
  or ARTH 3415W - Art of India [AH, GP, WI] (4.0 cr)
• RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  or CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  or JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
• RELS 3520 - History of the Holocaust (3.0 cr)
  or HIST 3520 - History of the Holocaust (3.0 cr)
• RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• RELS 3541 [Inactive] (3.0 cr)
  or CNES 3108 [Inactive] (3.0 cr)
• RELS 3543 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  or CNES 3543 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  or JWST 3543 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
• RELS 3581W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
  or HIST 3081W - Martyrs, Monks, Crusaders: World Christianity, 100-1400 [HIS, GP, WI] (3.0 cr)
• RELS 3585 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
  or HIST 3585 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
• RELS 3587 - Eastern Orthodoxy: History and Culture (3.0 cr)
  or HIST 3587 - Eastern Orthodoxy: History and Culture (3.0 cr)
  or JWST 3587 - Eastern Orthodoxy: History and Culture (3.0 cr)
• RELS 3612 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
  or RELS 5612 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  or ARTH 3335 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
or ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
• RELS 3621W \textit{(inactive)} [WI] (3.0 cr)
or RELS 5621W \textit{(inactive)} [WI] (3.0 cr)
• RELS 3622 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
or HIST 3802 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
• RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
or HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
• RELS 3624 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
or SOC 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
• RELS 3625 - Magic and Medicine (3.0 cr)
or HIST 3285 - Magic and Medicine (3.0 cr)
• RELS 3627 - The End of the World in Literature and History [HIS] (3.0 cr)
or ENGL 3025 - The End of the World in Literature and History [HIS] (3.0 cr)
• RELS 3671 - Hinduism (3.0 cr)
or RELS 5671 \textit{(inactive)} (3.0 cr)
or AMES 3671 - Hinduism (3.0 cr)
or AMES 5671 \textit{(inactive)} (3.0 cr)
• RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
or ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or AMES 3872 - The Cultures of the Silk Road (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
• RELS 3709 \textit{(inactive)} (3.0 cr)
or HIST 3503 \textit{(inactive)} (3.0 cr)
• RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
or GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
• RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or AMES 3871 - Islam: Religion and Culture (3.0 cr)
• RELS 3713 \textit{(inactive)} (3.0 cr)
or HIST 3506 \textit{(inactive)} (3.0 cr)
• RELS 3714 - Islam and the West (3.0 cr)
or HIST 3546 - Islam and the West (3.0 cr)
or GLOS 3643 - Islam and the West (3.0 cr)
• RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
or HIST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
or MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
• RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
or HIST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
• RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
• RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 5513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• RELS 3722 - The Ottoman Empire [HIS, GP] (3.0 cr)
or HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
• RELS 4049 - Religion and Culture (3.0 cr)
or ANTH 4049 - Religion and Culture (3.0 cr)
• RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
or SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
• RELS 5513W \textit{(inactive)} [WI] (3.0 cr)
or CNES 5513W \textit{(inactive)} [WI] (3.0 cr)
or JWST 5513W \textit{(inactive)} [WI] (3.0 cr)
• HIST 5614 - The Medieval Church (3.0 cr)
• RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
or ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (3.0 cr)
Twin Cities Campus
Russian B.A.
Slavic Languages & Literatures
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 32 to 52
- Degree: Bachelor of Arts

Russian is the native language of some 150 million citizens of the Russian Federal Republic. It is one of the five official languages of the UN, and ranks with English, Chinese, Hindi, Urdu, and Spanish as a major world language. Russian remains the unofficial lingua franca of the former Soviet republics, an indispensable communications tool across all of the Caucasus and Central Asia. Russian is a major language for scientific publication, and it is an increasingly important language for business and trade as Russian institutions, both public and private, integrate with their European and American counterparts.

Besides a thorough grounding in the Russian language, students in the Russian major become conversant with the enormous wealth of Russian cultural heritage in literature, visual art, theater, and music. In particular, Russia has produced one of the world's most vibrant and exciting literary traditions, including the works of poets like Pushkin, Lermontov, Blok, and Akhmatova, and writers like Gogol, Turgenev, Dostoevsky, Tolstoy, and Chekhov. Despite the upheavals caused by the fall of communism, Russian literary culture remains vibrant today, and only a fraction of this fascinating contemporary work is available in translation.

Further information on the value of a Russian major can be found at http://modules.russnet.org/why/.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning and Intermediate Russian
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- RUSS 1101 - Beginning Russian I (5.0 cr)
- RUSS 1102 - Beginning Russian II (5.0 cr)
- RUSS 3001 - Intermediate Russian I (5.0 cr)
- RUSS 3002 - Intermediate Russian II (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of Russian.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Russian BA is RUSS.

At least 17 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a minor in Russian, but not both.
All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Advanced Language Courses**
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- RUSS 3101 - Advanced Russian I (4.0 cr)
- RUSS 3102 - Advanced Russian II (4.0 cr)

**Required Courses**
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- RUSS 3421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
  or RUSS 5421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- RUSS 3422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
  or RUSS 5422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
- RUSS 3512 - Russian Art and Culture [AH, GP] (3.0 cr)

**Electives**
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
- RUSS 3105 - Russian Poetry and Prose (3.0 cr)
- RUSS 3900 - Topics in Russian Language, Literature, and Culture (1.0 - 4.0 cr)
- RUSS 5900 - Topics in Russian Language, Literature, and Culture (1.0 - 4.0 cr)
- RUSS 3404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
  or RUSS 5404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- RUSS 3411 - Dostoevsky in Translation [LITR, GP] (3.0 cr)
  or RUSS 5411 - Dostoevsky in Translation [LITR, GP] (3.0 cr)
- RUSS 3604 - Russia At The Movies: A Survey Of The History Of Russian Cinema [AH] (3.0 cr)
  or RUSS 5604 - Russia At The Movies: A Survey Of The History Of Russian Cinema [AH] (3.0 cr)
- Other course approved by the department's director of undergraduate studies.

**Directed Studies**
Take 0 - 2 course(s) from the following:
- RUSS 3993 - Directed Studies (1.0 - 4.0 cr)
- RUSS 5993 - Directed Studies (1.0 - 4.0 cr)

**Capstone**
The capstone is an individual directed study under the close supervision and mentoring of a member of the faculty. The subject is determined in consultation between student and mentor, who will continue to meet at regular intervals as the study proceeds. The outcome of the study is an analytical or interpretive essay of not less than twenty typed, double-spaced pages, showing evidence of appropriate use, as determined by the faculty mentor, of Russian-language sources.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- Students who double major and choose to complete the capstone requirement in their other major may waive the Russian BA capstone, and they do not need to replace the 3 credits.
- RUSS 3311W - Russian Major Project [WI] (3.0 cr)
  or RUSS 3311V - Honors Major Project in Russian [WI] (3.0 - 4.0 cr)

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- RUSS 3311W - Russian Major Project [WI] (3.0 cr)
- RUSS 3311V - Honors Major Project in Russian [WI] (3.0 - 4.0 cr)
Twin Cities Campus
Russian Minor
Slavic Languages & Literatures
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 26

Russian is the native language of some 150 million citizens of the Russian Federal Republic and of a very large population of emigres in other countries around the world, including the United States. Russian minors study the spoken language as well as the literature and culture of Russia. The wealth of the Russian cultural heritage in literature, visual art, theater, opera, instrumental music, and ballet is enormous.

Russian minors have the opportunity to use their language skills and cultural awareness in a broad variety of settings in both Russia and the United States. Students go on to work in business as financial and policy analysts for American and Russian companies. They work for non-governmental organizations, for publishing houses, for the print and broadcast media. They teach in Russian schools, and are employed in fields such as marketing, advertising, aerospace, and computer engineering.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Beginning Russian
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
- RUSS 1101 - Beginning Russian I (5.0 cr)
- RUSS 1102 - Beginning Russian II (5.0 cr)

Minor Requirements
Students are required to take 4 semester(s) of Russian.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota Twin Cities campus. In the Russian minor, this does not include learning abroad courses taken for resident credit.

Students may earn a BA or a minor in Russian, but not both.

Intermediate Russian
Take exactly 2 course(s) totaling exactly 10 credit(s) from the following:
- RUSS 3001 - Intermediate Russian I (5.0 cr)
- RUSS 3002 - Intermediate Russian II (5.0 cr)

Electives
Directed studies courses RUSS 3993 and RUSS 5993 may not count toward this requirement.
Take 6 or more credit(s) from the following:
- RUSS 3101 - Advanced Russian I (4.0 cr)
- RUSS 3102 - Advanced Russian II (4.0 cr)
- RUSS 3105 - Russian Poetry and Prose (3.0 cr)
- RUSS 3512 - Russian Art and Culture [AH, GP] (3.0 cr)
- RUSS 3900 - Topics in Russian Language, Literature, and Culture (1.0 - 4.0 cr)
- RUSS 5900 - Topics in Russian Language, Literature, and Culture (1.0 - 4.0 cr)
- RUSS 3404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
  or RUSS 5404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- RUSS 3411 - Dostoevsky in Translation [LITR, GP] (3.0 cr)

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Information current as of September 02, 2020
or RUSS 5411 - Dostoevsky in Translation [LITR, GP] (3.0 cr)
• RUSS 3421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
or RUSS 5421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
• RUSS 3422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
or RUSS 5422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
• RUSS 3604 - Russia At The Movies: A Survey Of The History Of Russian Cinema [AH] (3.0 cr)
or RUSS 5604 - Russia At The Movies: A Survey Of The History Of Russian Cinema [AH] (3.0 cr)
Twin Cities Campus  
Sociology B.A.  
Sociology  
College of Liberal Arts

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2020  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 34 to 37  
- Degree: Bachelor of Arts

Sociology examines stability and change in social life by addressing the underlying patterns of social relations in formal organizations, in legal institutions, and in the family, economy, and political arena.

Coursework focuses on the criminal justice system and criminal behavior, mental health, families and close relationships, education, urban and rural communities, politics and policy formation, social movements and social change, diverse racial and ethnic groups, and social psychology. Faculty interests in the comparative study of social relations and institutions in various countries add an international emphasis to these areas of study. All sociology courses emphasize the skills of social inquiry necessary for analyzing patterns of social relationships.

For more information, visit the sociology website for undergraduates at http://www.cla.umn.edu/sociology/.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Coursework
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
  or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Sociology BA is SOC.

At least 19 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree from the Department of Sociology: a BA or BS or minor in sociology; or a BA or BS or minor in sociology of law, criminology, and deviance.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Required Courses
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
SOC 3701 - Social Theory (4.0 cr)
SOC 3801 - Sociological Research Methods (4.0 cr)
SOC 3811 - Social Statistics [MATH] (4.0 cr)
or SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)

Electives
Take 5 or more course(s) totaling 15 or more credit(s) from the following:

- GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
- GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
- SOC 3003 - Social Problems (3.0 cr)
- SOC 3090 - Topics in Sociology (3.0 cr)
- SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
- SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3221 - Sociology of Gender (3.0 cr)
- SOC 3241 - Sociology of Women's Health: Experiences from Around the World (3.0 cr)
- SOC 3246 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
- SOC 3307 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
- SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
- SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- SOC 3411W - Organizations and Society [WI] (3.0 cr)
- SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
- SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
- SOC 3446 - Comparing Healthcare Systems [GP] (3.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- SOC 3452 - Education and Society (3.0 cr)
- SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
- SOC 3507 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
- SOC 3641 - Understanding New Zealand: Culture, Society, and Environment [GP, CIV] (3.0 cr)
- SOC 3721 - Principles of Social Psychology (3.0 cr)
- SOC 4090 - Topics in Sociology (3.0 cr)
- SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
- SOC 4106 - Crime on TV (3.0 cr)
- SOC 4108 - Current Issues in Crime Control (3.0 cr)
- SOC 4111 - Deviant Behavior (3.0 cr)
- SOC 4114 - Women & the Criminal Justice System (3.0 cr)
- SOC 4125 - Policing America (3.0 cr)
- SOC 4142 - Inactive (3.0 cr)
- SOC 4149 - Sociology of Killing (3.0 cr)
- SOC 4161 - Criminal Law in American Society (3.0 cr)
- SOC 4162 - Criminal Procedure in American Society (3.0 cr)
- SOC 4190 - Topics in Sociology With Law, Criminology, and Deviance Emphasis (3.0 cr)
- SOC 4246 - Sociology of Health and Illness (3.0 cr)
- SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
- SOC 4511 - Sociology of Children & Youth (3.0 cr)
- SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
- SOC 4881 - Population Studies Research Practicum (3.0 cr)
- SOC 5090 - Topics in Sociology (1.0 - 3.0 cr)
- SOC 5455 - Sociology of Education (3.0 cr)
- SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
- SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
or AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
- SOC 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
or GLOS 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
- SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
or SOC 5246 - Disease, Disasters, and Other Killers [HIS, ENV] (3.0 cr)
- SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- SOC 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
or RELS 3624 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
- SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
- SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
or GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
or SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
or AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)

• SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)
or GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)

• SOC 3511 - World Population Problems [GP] (3.0 cr)
or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
or SOC 5511 - World Population Problems (3.0 cr)

• SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)

• SOC 3671 - Chinese Society: Culture, Networks, & Inequality (3.0 cr)
or GLOS 3911 {Inactive} (3.0 cr)

• SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681V - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)

• SOC 4101W - Sociology of Law [WI] (3.0 cr)
or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)

• SOC 4102 - Criminology (3.0 cr)
or SOC 4102H - Honors: Criminology (3.0 cr)

• SOC 4104 - Crime and Human Rights (3.0 cr)
or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
or SOC 5104 - Crime and Human Rights (3.0 cr)
or GLOS 4104 - Crime and Human Rights (3.0 cr)
or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
or GLOS 5104 - Crime and Human Rights (3.0 cr)

• SOC 4135 - Sociology of White-Collar Crime (3.0 cr)
or SOC 4135H - Honors: Sociology of White-Collar Crime (3.0 cr)
or SOC 4141 - Juvenile Delinquency (3.0 cr)
or SOC 4141H - Honors: Juvenile Delinquency (3.0 cr)

• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 {Inactive} [ENV] (3.0 cr)

• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
or SOC 4309H - Honors: Religion in American Public Life - Culture, Politics, & Communities [CIV] (3.0 cr)
or RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)

• SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)

• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)

• SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 5411 - Terrorist Networks & Counterterror Organizations (3.0 cr)

• SOC 4451 - Sport, Culture & Society (3.0 cr)
or SOC 4451H - Honors: Sport, Culture & Society (3.0 cr)

• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
or SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)

• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
or SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)

Capstone
In the capstone, students will emphasize the relationship between a sociological perspective and critical thinking, effective communication, and meaningful civic engagement.

Before beginning the capstone, students must be a declared major and have completed all major coursework except one sociology elective course. Students are strongly advised to contact the department at least two semesters in advance of registration to insure they are on the capstone wait list.

Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major may waive the sociology capstone,
Seminar
This course is designed to: a) provide students with an opportunity to reflect on what they have learned as a sociology major; b) use that knowledge to write sociological analyses based on community service learning; and c) think about how the knowledge, skills, and insights of the sociological enterprise can be used and applied outside of the University.

SOC 4966W - Capstone Experience: Seminar [WI] (3.0 cr)
or Directed Research (4 cr.)
SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)

or Directed Research (1 cr.) with SOC elective
SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
The additional sociology elective must be pre-approved by the department advisor.
SOC 3xxx
or SOC 4xxx
or SOC 5xxx

Honors
Students seeking honors in sociology should take both proseminars in their senior year.
SOC 4977V - Honors Capstone Experience: Proseminar I [WI] (3.0 cr)
SOC 4978V - Honors Capstone Experience: Proseminar II [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- SOC 3301W - Politics and Society [WI] (3.0 cr)
- SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
- SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- SOC 3411W - Organizations and Society [WI] (3.0 cr)
- SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
  or AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
- SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  or GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- SOC 4101W - Sociology of Law [WI] (3.0 cr)
  or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
- SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)
  or SOC 4966W - Capstone Experience: Seminar [WI] (3.0 cr)
- SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
  or SOC 4977V - Honors Capstone Experience: Proseminar I [WI] (3.0 cr)
  or SOC 4978V - Honors Capstone Experience: Proseminar II [WI] (3.0 cr)
Twin Cities Campus
Sociology B.S.

Sociology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 53 to 61
- Degree: Bachelor of Science

Sociology examines stability and change in social life by addressing the underlying patterns of social relations in formal organizations, in legal institutions, and in the family, economy, and political arena.

Coursework focuses on the criminal justice system and criminal behavior, mental health, families and close relationships, education, urban and rural communities, politics and policy formation, social movements and social change, diverse racial and ethnic groups, and social psychology. Faculty interests in the comparative study of social relations and institutions in various countries add an international emphasis to these areas of study. All sociology courses emphasize the skills of social inquiry necessary for analyzing patterns of social relationships.

The sociology BS program is for students interested in developing a rigorous mathematical concentration in research methodologies. This option builds on the course requirements for the sociology BS program by featuring 12-16 additional credits of upper-division coursework in one of four clusters: (1) organizations, business, or non-profits, (2) health care and careers, (3) policy analysis, or (4) quantitative emphasis.

For more information, visit the sociology website for undergraduates at http://cla.umn.edu/sociology/.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students who are interested in the BS option are encouraged to schedule a meeting with the departmental advisor to discuss the major and its requirements.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Coursework
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
  or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete a sub-plan in consultation with the departmental advisor. Students must be on a pre-approved waiting list to register for the capstone project and should contact the Department of Sociology at least two semesters in advance of registration.

A given course may only count towards one major requirement.

At least 28 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus

Students may earn no more than one undergraduate degree from the Department of Sociology: a BA or BS or minor in sociology; or a
BA or BS or minor in sociology of law, criminology, and deviance.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Quantitative Courses
In order to be successful, students must take these courses in sequence. The calculus course should be taken before social statistics. Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371H - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)
or SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)

Data Analysis Courses
Note: A given course may only count towards one major requirement.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
- SOC 3811/5811 and SOC 3801 are prerequisites of SOC 4821.
- SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
- SOC 3811/5811 is a prerequisite of STAT 3022 and STAT 3032. It is strongly recommended that MATH 1142/1271/1571H be completed before taking STAT 3022 or STAT 3032.

Theory & Methods Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
- SOC 3701 - Social Theory (4.0 cr)
- SOC 3801 - Sociological Research Methods (4.0 cr)

Electives
Students must complete at least five 3xxx-5xxx SOC elective courses. Any SOC 3xxx, 4xxx, 5xxx, or its cross-list may count towards this requirement. Consult the departmental advisor to choose sociology electives that pair with you sub-plan.
Take 5 or more course(s) totaling 15 or more credit(s) from the following:
- GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
- GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
- SOC 3003 - Social Problems (3.0 cr)
- SOC 3090 - Topics in Sociology (3.0 cr)
- SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
- SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3221 - Sociology of Gender (3.0 cr)
- SOC 3241 - Sociology of Women's Health: Experiences from Around the World (3.0 cr)
- SOC 3301W - Politics and Society [WI] (3.0 cr)
- SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
- SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- SOC 3411W - Organizations and Society [WI] (3.0 cr)
- SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
- SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
- SOC 3446 - Comparing Healthcare Systems [GP] (3.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- SOC 3452 - Education and Society (3.0 cr)
- SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
- SOC 3507 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
- SOC 3641 - Understanding New Zealand: Culture, Society, and Environment [GP, CIV] (3.0 cr)
- SOC 3721 - Principles of Social Psychology (3.0 cr)
- SOC 4090 - Topics in Sociology (3.0 cr)
- SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
- SOC 4106 - Crime on TV (3.0 cr)
- SOC 4108 - Current Issues in Crime Control (3.0 cr)
- SOC 4111 - Deviant Behavior (3.0 cr)
- SOC 4114 - Women & the Criminal Justice System (3.0 cr)
- SOC 4125 - Policing America (3.0 cr)
- SOC 4142 [Inactive] (3.0 cr)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SOC 4149</td>
<td>Sociology of Killing</td>
<td>3.0 cr</td>
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<tr>
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<tr>
<td>SOC 4461</td>
<td>Sociology of Ethnic and Racial Conflict [DSJ]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 4511</td>
<td>Sociology of Children &amp; Youth</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 4821</td>
<td>Measuring the Social World: Concepts and Analysis</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4881</td>
<td>Population Studies Research Practicum</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 5090</td>
<td>Topics in Sociology</td>
<td>1.0 - 3.0 cr</td>
</tr>
<tr>
<td>SOC 5455</td>
<td>Sociology of Education</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 3101</td>
<td>Sociological Perspectives on the Criminal Justice System [CIV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 3101H</td>
<td>Honors: Sociological Perspectives on the Criminal Justice System [CIV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3211W</td>
<td>Race and Racism in the US [DSJ, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or AAS 3211W</td>
<td>Race &amp; Racism in the U.S. [DSJ, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3215</td>
<td>Supercapitalism: Labor, Consumption &amp; the Environment in the New Global Economy</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3246</td>
<td>Diseases, Disasters &amp; Other Killers [HIS, ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 5246</td>
<td>Disease, Disasters, and Other Killers [HIS, ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3251W</td>
<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or AAS 3251W</td>
<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 3309</td>
<td>Atheists &amp; Others: Religious Outsiders in the United States [DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or RELS 3624</td>
<td>Atheists &amp; Others: Religious Outsiders in the United States [DSJ]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 3412</td>
<td>Social Networking: Theories and Methods [TS]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 3412H</td>
<td>Honors: Social Networking: Theories and Methods [TS]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3417W</td>
<td>Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3415W</td>
<td>Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3503</td>
<td>Asian American Identities, Families &amp; Communities [SOCS, DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 3503H</td>
<td>Honors: Asian American Identities, Families &amp; Communities [SOCS, DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or AAS 3503</td>
<td>Asian American Identities, Families, &amp; Communities [SOCS, DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3505</td>
<td>Migrations: People in Motion [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3705</td>
<td>Migrations: People in Motion [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3511</td>
<td>World Population Problems [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 3511H</td>
<td>Honors: World Population Problems [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3613W</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 3613V</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3613W</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3613V</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3671</td>
<td>Chinese Society: Culture, Networks, &amp; Inequality (3.0 cr)</td>
<td></td>
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<tr>
<td>or GLOS 3911</td>
<td>Inactive [3.0 cr]</td>
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<tr>
<td>SOC 3681</td>
<td>Gender and the Family in the Islamic World (3.0 cr)</td>
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<tr>
<td>or GLOS 3681</td>
<td>Gender and the Family in the Islamic World (3.0 cr)</td>
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<tr>
<td>or GWSS 3681</td>
<td>Gender and the Family in the Islamic World (3.0 cr)</td>
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<tr>
<td>SOC 4101W</td>
<td>Sociology of Law [WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4101V</td>
<td>Honors: Sociology of Law [WI]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 4102</td>
<td>Criminology (3.0 cr)</td>
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<tr>
<td>SOC 4102H</td>
<td>Honors: Criminology (3.0 cr)</td>
<td></td>
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<tr>
<td>SOC 4104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4104H</td>
<td>Honors: Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 5104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4104H</td>
<td>Honors: Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 5104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4135</td>
<td>Sociology of White-Collar Crime</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4135H</td>
<td>Honors: Sociology of White-Collar Crime</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4141</td>
<td>Juvenile Delinquency</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4141H</td>
<td>Honors: Juvenile Delinquency</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4171</td>
<td>Sociology of International Law: Human Rights &amp; Trafficking [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4406</td>
<td>Inactive [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4305</td>
<td>Environment &amp; Society: An Enduring Conflict [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4305</td>
<td>Inactive [ENV]</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>
Capstone
In the capstone, students will emphasize the relationship between a sociological perspective and critical thinking, effective communication, and meaningful civic engagement.

Before beginning the capstone, students must be a declared major and have completed all major coursework except one sociology elective course. Students are strongly advised to contact the department at least two semesters in advance of registration to insure they are on the capstone wait list.

Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Sociology capstone, but they do need to replace the 3 credits with another sociology elective course.

Seminar
This course is designed to: a) provide students with an opportunity to reflect on what they have learned as a sociology major; b) use that knowledge to write sociological analyses based on community service learning; and c) think about how the knowledge, skills, and insights of the sociological enterprise can be used and applied outside of the University.
SOC 4966W - Capstone Experience: Seminar [WI] (3.0 cr)

or Directed Research (4 cr.)
SOC 4994W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)

c or Directed Research (1 cr.) with SOC elective
SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)

The additional sociology elective must be pre-approved by the department advisor.
SOC 3xxx
or SOC 4xxx
or SOC 5xxx

or Honors
Students seeking Honors in Sociology should take both proseminars in their senior year.
SOC 4977V - Honors Capstone Experience: Proseminar I [WI] (3.0 cr)
SOC 4978V - Honors Capstone Experience: Proseminar II [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
SOC 3301W - Politics and Society [WI] (3.0 cr)
SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
SOC 3411W - Organizations and Society [WI] (3.0 cr)
SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
SOC 3451W - Cities & Social Change [WI] (3.0 cr)
AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
or SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)

or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
SOC 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
Program Sub-plans

Students are required to complete one of the following sub-plans.

Organization, Business, or Non-Profit

Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses

Note: ECON 1101 & 1102 are strongly recommended as prerequisites for most of the following courses.

Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:

- ABUS 3301 - Introduction to Quality Management (3.0 cr)
- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- ABUS 4041 - Dynamics of Leadership (3.0 cr)
- ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
- ABUS 4104 - Management and Human Resource Practices (3.0 cr)
- ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
- ABUS 4509 - New Product Development (3.0 cr)
- ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
- ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- ACCT 3001 - Introduction to Management Accounting (3.0 cr)
- AMIN 4511 - Indigenous Political Economies (3.0 cr)
- AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
- ANTH 4121 - Business Anthropology (3.0 cr)
- APEC 3002 - Managerial Economics (4.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- APEC 3821 - Retail Center Management (3.0 cr)
- APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
- APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
- BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)
- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- INS 4100 - Corporate Risk Management (2.0 cr)
- LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
- LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
- MGMT 3001 - Fundamentals of Management (3.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
- MKTG 3001 - Principles of Marketing (3.0 cr)
- OLPD 3318 - Introduction to Project Management (3.0 cr)
- OLPD 3381 - Developing Intercultural Competence (3.0 cr)
- OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
- OLPD 3621 - Introduction to Training and Development (3.0 cr)
- OLPD 3641 - Introduction to Organization Development (3.0 cr)
- OLPD 3828 - Diversity in the Workplace (3.0 cr)
- OLPD 4401 - E-Marketing (3.0 cr)
• OLPD 4421 - Practicum in Nonprofit Organizations (2.0 cr)
• OLPD 4426 - Strategic Customer Relationship Management (3.0 cr)
• PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• PA 4190 - Topics in Public and Nonprofit Leadership and Management (1.0 - 3.0 cr)
• POL 3499W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)
• SCO 3045 - Sourcing and Supply Management (2.0 cr)
• UC 3201 (Inactive) (4.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
  or ECON 3101 - Intermediate Microeconomics (4.0 cr)
• APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
  or ECON 3102 - Intermediate Macroeconomics (4.0 cr)
• CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
  or CHIC 5374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
• HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
  or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Health Care and Careers
Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:
• ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
• ADDS 5081 - Multicultural Foundations of Behavioral Health (3.0 cr)
• ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• CPHS 5115 - Cultural Awareness, Knowledge and Health (3.0 cr)
• CPHS 5121 - Whole Systems Healing: Health and the Environment (2.0 cr)
• CPHS 5641 - Animals in Health Care: The Healing Dimensions of Human/Animal Relationships (3.0 cr)
• FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
• HMED 3005W - Health Care in History I [HIS, WI] (4.0 cr)
• HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
• HMED 3055 - Women, Health, and History [HIS, DSJ] (3.0 cr)
• JOUR 5541 - Mass Communication and Public Health (3.0 cr)
• KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
• OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
• OLPD 3621 - Introduction to Training and Development (3.0 cr)
• OLPD 3641 - Introduction to Organization Development (3.0 cr)
• OLPD 3828 - Diversity in the Workplace (3.0 cr)
• PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• PHAR 4204W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
• PSY 3206 - Introduction to Health Psychology (3.0 cr)
• PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
• PUBH 3351 - Epidemiology: People, Places, and Disease (2.0 cr)
• PUBH 3601 - Maternal and Child Health Global Public Health Issues (2.0 cr)
• PUBH 3801 - Health Economics and Policy (3.0 cr)
• SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
• SW 3703 - Gender Violence in Global Perspective (3.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRL 3322W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Policy Analysis
Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:

- AFRO 3426 - African Americans, Social Policy, and the Welfare State (3.0 cr)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
- APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
- ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- GWSS 3590 [inactive] (3.0 cr)
- HECJ 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity (Field Seminar) (4.0 cr)
- ID 3996 - Internship Reflection: Making Meaning of Your Experience (1.0 cr)
- LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
- LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
- OLPD 3336 [inactive] [CIV] (3.0 cr)
- OLPD 3381 - Developing Intercultural Competence (3.0 cr)
- PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- PA 4190 - Topics in Public and Nonprofit Leadership and Management (1.0 - 3.0 cr)
- PHIL 3304 - Law and Morality (4.0 cr)
- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
- POL 3309 - Justice in America (3.0 cr)
- POL 3319 - Education and the American Dream [SOCS, DSJ] (3.0 cr)
- POL 3321 - Issues in American Public Policy (3.0 cr)
- POL 3325 - U.S. Campaigns and Elections (3.0 cr)
- POL 3464 - The Politics of Economic Inequality (3.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3498W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
- POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 3766 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
- POL 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
- POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
- POL 4495 [inactive] [DSJ] (3.0 cr)
- POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
- POL 4771I - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
- POL 4773W - Advocacy Organizations, Social Movements, and the Politics of Identity [DSJ, WI] (3.0 cr)
- PUBH 3801 - Health Economics and Policy (3.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
- WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
- POL 3785H [inactive] (3.0 cr)
- AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AMIN 4231 - Color of Public Policy: African Americans, American Indians, American Asians, & Chicanos in the U.S. (3.0 cr)
- CHIC 4231 - Color of Public Policy: African Americans, American Indians, American Asians & Chicanos in the U.S. (3.0 cr)
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
- AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
- POL 4525W - Federal Indian Policy [WI] (3.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
- BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
or GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
or RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Quantitative Emphasis

Some courses require prerequisites, consult the University catalog for more information.

Supportive Field Courses

Note: MATH 1272 is a required prerequisite for most of the following courses. MATH 1272 carries a prerequisite of MATH 1271. Students who are interested in this sub-plan should take MATH 1271 instead of MATH 1142 in order to complete these course sequences in a timely fashion.

Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• HIST 5970 - Advanced Research in Quantitative History (4.0 cr)
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
• MATH 2263 - Multivariable Calculus (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 5561 - Basic Theory of Probability and Statistics (4.0 cr)
• PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
• POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
• PSY 5081H - Mathematical Models of Human Behavior (3.0 cr)
• PSY 5082 - Psychological Measurement: Theory and Methods (3.0 cr)
• PSY 5085 - Advanced Psychological and Educational Measurement (4.0 cr)
• PUBH 3351 - Epidemiology: People, Places, and Disease (2.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research [MATH] (4.0 cr)
or HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research (4.0 cr)
• HIST 3797 - History of Population [SOCS, GP] (3.0 cr)
or HIST 5797 - Methods of Population History (3.0 cr)
Twin Cities Campus
Sociology Minor
Sociology
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16 to 20

Sociologists study human social behavior. More specifically, sociology examines how we group ourselves (families, social groups, formal organizations, societies); how we behave in groups (collective action, social change, crime and delinquency); and how characteristics like age, race, social class, and gender affect our relationships with each other and with organizations and institutions.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students who are interested in this minor are encouraged to schedule a meeting with the departmental advisor to discuss the minor and its requirements.

For more information, visit the sociology website for undergraduates at http://www.soc.umn.edu/undergrad/.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
At least 8 upper-division credits in the minor must be taken from the Department of Sociology at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree from the Department of Sociology: a BA or BS or minor in sociology; or a BA or BS or minor in sociology of law, criminology, and deviance.

Social Theory
It is recommended that students take one 1xxx-level SOC course before taking SOC 3701. See Electives section for 1xxx-level courses that count towards the minor.
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- SOC 3701 - Social Theory (4.0 cr)

Electives
Only one 1xxx-level course may count towards the minor.
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:

Lower-Division
Take 0 - 1 course(s) from the following:
- SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
- SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

Upper Division
Take 3 - 4 course(s) totaling 9 - 16 credit(s) from the following:
- GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
- GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
- SOC 3003 - Social Problems (3.0 cr)
- SOC 3090 - Topics in Sociology (3.0 cr)
- SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
- SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3221 - Sociology of Gender (3.0 cr)
- SOC 3241 - Sociology of Women's Health: Experiences from Around the World (3.0 cr)
- SOC 3301W - Politics and Society [WI] (3.0 cr)
- SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
- SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- SOC 3411W - Organizations and Society [WI] (3.0 cr)
• SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
• SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
• SOC 3446 - Comparing Healthcare Systems [GP] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 3507 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
• SOC 3641 - Understanding New Zealand: Culture, Society, and Environment [GP, CIV] (3.0 cr)
• SOC 3721 - Principles of Social Psychology (3.0 cr)
• SOC 3801 - Sociological Research Methods (4.0 cr)
• SOC 3811 - Social Statistics [MATH] (4.0 cr)
• SOC 4090 - Topics in Sociology (3.0 cr)
• SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
• SOC 4106 - Crime on TV (3.0 cr)
• SOC 4108 - Current Issues in Crime Control (3.0 cr)
• SOC 4111 - Deviant Behavior (3.0 cr)
• SOC 4114 - Women & the Criminal Justice System (3.0 cr)
• SOC 4125 - Policing America (3.0 cr)
• SOC 4142 [Inactive] (3.0 cr)
• SOC 4149 - Sociology of Killing (3.0 cr)
• SOC 4161 - Criminal Law in American Society (3.0 cr)
• SOC 4162 - Criminal Procedure in American Society (3.0 cr)
• SOC 4190 - Topics in Sociology With Law, Criminology, and Deviance Emphasis (3.0 cr)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
• SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SOC 4511 - Sociology of Children & Youth (3.0 cr)
• SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
• SOC 4881 - Population Studies Research Practicum (3.0 cr)
• SOC 5090 - Topics in Sociology (1.0 - 3.0 cr)
• SOC 5455 - Sociology of Education (3.0 cr)
• SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)
• SOC 5101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  or SOC 5101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• SOC 5211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
  or AAS 5211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
• SOC 5215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
• SOC 5246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
  or SOC 5246 - Disease, Disasters, and Other Killers [HIS, ENV] (3.0 cr)
• SOC 5251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AAS 5251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• SOC 5309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
  or RELS 3624 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
• SOC 5312 - Social Networking: Theories and Methods [TS] (3.0 cr)
  or SOC 5312H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
• SOC 5417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  or GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• SOC 5503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  or SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  or AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
• SOC 5505 - Migrations: People in Motion [GP] (3.0 cr)
  or GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 5511 - World Population Problems [GP] (3.0 cr)
  or SOC 5511H - Honors: World Population Problems [GP] (3.0 cr)
• SOC 5511W - World Population Problems (3.0 cr)
• SOC 5613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 5613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 5617 - Chinese Society: Culture, Networks, & Inequality (3.0 cr)
  or GLOS 3911 [Inactive] (3.0 cr)
• SOC 5681 - Gender and the Family in the Islamic World (3.0 cr)
  or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)

• SOC 4101V - Sociology of Law [WI] (3.0 cr)
or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4102 - Criminology (3.0 cr)
or SOC 4102H - Honors: Criminology (3.0 cr)
• SOC 4104 - Crime and Human Rights (3.0 cr)
or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
or SOC 5104 - Crime and Human Rights (3.0 cr)
or GLOS 4104 - Crime and Human Rights (3.0 cr)
or GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
or GLOS 5104 - Crime and Human Rights (3.0 cr)
• SOC 4105 - Sociology of White-Collar Crime (3.0 cr)
or SOC 4105H - Honors: Sociology of White-Collar Crime (3.0 cr)
• SOC 4141 - Juvenile Delinquency (3.0 cr)
or SOC 4141H - Honors: Juvenile Delinquency (3.0 cr)
• SOC 4171 - Sociology of International Law: Human Rights & Trafficking [GP] (3.0 cr)
or GLOS 4406 [Inactive] [GP] (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 [Inactive] [ENV] (3.0 cr)
• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
or SOC 4309H - Honors: Religion in American Public Life - Culture, Politics, & Communities [CIV] (3.0 cr)
or RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
• SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
or GLOS 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 5411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4451 - Sport, Culture & Society (3.0 cr)
or SOC 4451H - Honors: Sport, Culture & Society (3.0 cr)
• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
or SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOC, DSJ] (3.0 cr)
or SOC 4551H - Honors: Sociology of Sexualities [SOC, DSJ] (3.0 cr)
Twin Cities Campus

Sociology of Law, Criminology, and Deviance B.A.

Sociology

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 to 37
- Degree: Bachelor of Arts

Sociology examines stability and change in social life by addressing the underlying patterns of social relations in formal organizations, in legal institutions, and in the family, economy, and political arena.

Coursework focuses on the criminal justice system and criminal behavior, mental health, families and close relationships, education, urban and rural communities, politics and policy formation, social movements and social change, diverse racial and ethnic groups, and social psychology. Faculty interests in the comparative study of social relations and institutions in various countries add an international emphasis to these areas of study. All sociology courses emphasize the skills of social inquiry necessary for analyzing patterns of social relationships.

For more information, visit the sociology website at http://www.cla.umn.edu/sociology/.

Program Delivery

This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Preparatory Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
  or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Sociology of Law, Criminology, and Deviance BA is SOC.

At least 19 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree from the Department of Sociology: a BA or BS or minor in sociology; or a BA or BS or minor in sociology of law, criminology, and deviance.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Criminal Justice or Criminal Behavior
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• SOC 1101 - Law, Crime, & Punishment (3.0 cr)
or SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
or SOC 3102 - Criminal Behavior and Social Control (3.0 cr)

Theory and Methods Courses
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
• SOC 3701 - Social Theory (4.0 cr)
• SOC 3801 - Sociological Research Methods (4.0 cr)
• SOC 3811 - Social Statistics [MATH] (4.0 cr)
or SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)

Electives
Students take at least four upper division elective courses for 12 elective credits in total. At least three elective credits must be General SOC (non-31xx and non-41xx). At least six elective credits must be from 41xx-level LCD courses. The remaining credits can be from any SOC 3xxx or 4xxx course.
Take 4 or more course(s) totaling 12 or more credit(s) from the following:

General SOC 3xxx, 4xxx
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
• GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
• SOC 3003 - Social Problems (3.0 cr)
• SOC 3090 - Topics in Sociology (3.0 cr)
• SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
• SOC 3221 - Sociology of Gender (3.0 cr)
• SOC 3241 - Sociology of Women's Health: Experiences from Around the World (3.0 cr)
• SOC 3301W - Politics and Society [WI] (3.0 cr)
• SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 3411W - Organizations and Society [WI] (3.0 cr)
• SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
• SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
• SOC 3446 - Comparing Healthcare Systems [GP] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3452 - Education and Society (3.0 cr)
• SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 3507 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
• SOC 3641 - Understanding New Zealand: Culture, Society, and Environment [GP, CIV] (3.0 cr)
• SOC 3671 - Chinese Society: Culture, Networks, & Inequality (3.0 cr)
• SOC 3721 - Principles of Social Psychology (3.0 cr)
• SOC 4090 - Topics in Sociology (3.0 cr)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
• SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SOC 4511 - Sociology of Children & Youth (3.0 cr)
• SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
• SOC 4881 - Population Studies Research Practicum (3.0 cr)
• SOC 5090 - Topics in Sociology (1.0 - 3.0 cr)
• SOC 5455 - Sociology of Education (3.0 cr)
• SOC 5211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
or AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
• SOC 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
or GLOS 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
• SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
or SOC 5246 - Disease, Disasters, and Other Killers [HIS, ENV] (3.0 cr)
• SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• SOC 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
or RELS 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
• SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
• SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
or GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)

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or SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
or AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)

• SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)
or GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 3511 - World Population Problems [GP] (3.0 cr)
or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
or SOC 5511 - World Population Problems (3.0 cr)
• SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 3685 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 - (Inactive) [ENV] (3.0 cr)
• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
or SOC 4309H - Honors: Religion in American Public Life - Culture, Politics, & Communities [CIV] (3.0 cr)
or RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
• SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
or JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
or GLOS 4321 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
• SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 5411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4451 - Sport, Culture & Society (3.0 cr)
or SOC 4451H - Honors: Sport, Culture & Society (3.0 cr)
• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
or SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
or SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
• SOC 4611 - Women & the Criminal Justice System (3.0 cr)
or SOC 4614 - Women & the Criminal Justice System (3.0 cr)
• SOC 4625 - Policing America (3.0 cr)
or SOC 4642 - (Inactive) (3.0 cr)
• SOC 4649 - Sociology of Killing (3.0 cr)
or SOC 461H - Criminal Law in American Society (3.0 cr)
or SOC 4612 - Criminal Procedure in American Society (3.0 cr)
or SOC 490 - Topics in Sociology With Law, Criminology, and Deviance Emphasis (3.0 cr)
or SOC 4101W - Sociology of Law [WI] (3.0 cr)
or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4102 - Criminal Behavior and Social Control (3.0 cr)
or SOC 4102H - Honors: Criminal Behavior (3.0 cr)
or SOC 4104 - Crime and Human Rights (3.0 cr)
or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
or SOC 5104 - Crime and Human Rights (3.0 cr)
or GLOS 4104 - Crime and Human Rights (3.0 cr)
or GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
or GLOS 5104 - Crime and Human Rights (3.0 cr)
or SOC 4135 - Sociology of White-Collar Crime (3.0 cr)
or SOC 4135H - Honors: Sociology of White-Collar Crime (3.0 cr)
• SOC 4141 - Juvenile Delinquency (3.0 cr)
or SOC 4141H - Honors: Juvenile Delinquency (3.0 cr)
• SOC 4171 - Sociology of International Law: Human Rights & Trafficking [GP] (3.0 cr)
or GLOS 4406 (inactive) [GP] (3.0 cr)

Capstone
In the capstone, students will emphasize the relationship between a sociological perspective and critical thinking, effective communication, and meaningful civic engagement.

Before beginning the capstone, students must be a declared major and have completed all major coursework except one sociology elective course. Students are strongly advised to contact the department at least two semesters in advance of registration to insure they are on the capstone wait list.

Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Sociology capstone, but they do need to replace the 3 credits with another sociology elective course.

Seminar
This course is designed to: a) provide students with an opportunity to reflect on what they have learned as a sociology major; b) use that knowledge to write sociological analyses based on community service learning; and c) think about how the knowledge, skills, and insights of the sociological enterprise can be used and applied outside of the University.
SOC 4966W - Capstone Experience: Seminar [WI] (3.0 cr)
or Directed Research (4 cr.)
SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)
or Directed Research (1 cr.) with SOC elective
SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
The additional sociology elective must be pre-approved by the department advisor.
SOC 3xx
or SOC 4xx
or SOC 5xx
or Honors
Students seeking Honors in Sociology should take both proseminars in their senior year.
SOC 4977V - Honors Capstone Experience: Proseminar I [WI] (3.0 cr)
SOC 4978V - Honors Capstone Experience: Proseminar II [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• SOC 3301W - Politics and Society [WI] (3.0 cr)
• SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 3411W - Organizations and Society [WI] (3.0 cr)
• SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
or AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
• SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
or GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
or SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)
or SOC 4966W - Capstone Experience: Seminar [WI] (3.0 cr)
or SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
or SOC 4977V - Honors Capstone Experience: Proseminar I [WI] (3.0 cr)
or SOC 4978V - Honors Capstone Experience: Proseminar II [WI] (3.0 cr)
Twin Cities Campus
Sociology of Law, Criminology, and Deviance B.S.
Sociology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 53 to 61
- Degree: Bachelor of Science

Sociology examines stability and change in social life by addressing the underlying patterns of social relations in formal organizations, in legal institutions, and in the family, economy, and political arena.

Coursework focuses on the criminal justice system and criminal behavior, mental health, families and close relationships, education, urban and rural communities, politics and policy formation, social movements and social change, diverse racial and ethnic groups, and social psychology. Faculty interests in the comparative study of social relations and institutions in various countries add an international emphasis to these areas of study. All sociology courses emphasize the skills of social inquiry necessary for analyzing patterns of social relationships. The sociology BS program is for students interested in developing a rigorous mathematical concentration in research methodologies. This option builds on course requirements for the sociology BA program by featuring 12-16 additional credits of upper division coursework in one of four clusters: (1) organizations, business, or non-profits, (2) health care and careers, (3) policy analysis, or (4) quantitative emphasis.

For more information, visit the sociology website at www.cla.umn.edu/sociology/.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

Students who are interested in the BS option are encouraged to schedule a meeting with the departmental advisor to discuss the major and its requirements.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Courses
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
- or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete a sub-plan in consultation with the departmental advisor. Students must be on a pre-approved waiting list to register for the capstone project and should contact the Department of Sociology at least two semesters in advance of registration. Students may earn no more than one undergraduate degree from the Department of Sociology: a BA or BS or minor in sociology; or a BA or BS or minor in sociology of law, criminology, and deviance.

At least 28 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus

All incoming CLA freshmen must complete the First-Year Experience course sequence.
Quantitative Courses
In order to be successful, students must take these courses in sequence. The calculus course should be taken before social statistics.

Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

- MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)
or SOC 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)

Data Analysis Courses
Note: A given course may only count towards one major requirement.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

- SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
-or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
- SOC 3811/5811 and SOC 3801 are prerequisites of SOC 4821.
- SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
- SOC 3811/5811 is a prerequisite of STAT 3022 and STAT 3032. It is strongly recommended that MATH 1142/1271/1571H be completed before taking STAT 3022 or STAT 3032.
- STAT 3022 - Data Analysis (4.0 cr)
- STAT 3032 - Regression and Correlated Data (4.0 cr)

Criminal Justice or Criminal Behavior
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- SOC 1101 - Law, Crime, & Punishment (3.0 cr)
-or SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
or SOC 3102 - Criminal Behavior and Social Control (3.0 cr)

Theory and Methods Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

- SOC 3701 - Social Theory (4.0 cr)
- SOC 3801 - Sociological Research Methods (4.0 cr)

Electives
Students take at least 4 3xxx-5xxx SOC elective courses. At least 1 course must be General SOC (non-31xx and non-41xx). At least 2 courses must be SOC 41xx. The remaining credits can be from any SOC 3xxx or 4xxx course. Consult the departmental advisor to choose sociology electives that pair with your sub-plan.

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

General SOC 3xxx, 4xxx
Take 1 or more course(s) from the following:

- GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
- GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
- SOC 3003 - Social Problems (3.0 cr)
- SOC 3090 - Topics in Sociology (3.0 cr)
- SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3221 - Sociology of Gender (3.0 cr)
- SOC 3241 - Sociology of Women's Health: Experiences from Around the World (3.0 cr)
- SOC 3301W - Politics and Society [WI] (3.0 cr)
- SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
- SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- SOC 3411W - Organizations and Society [WI] (3.0 cr)
- SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
- SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
- SOC 3446 - Comparing Healthcare Systems [GP] (3.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- SOC 3452 - Education and Society (3.0 cr)
- SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
- SOC 3507 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
- SOC 3641 - Understanding New Zealand: Culture, Society, and Environment [GP, CIV] (3.0 cr)
- SOC 3671 - Chinese Society: Culture, Networks, & Inequality (3.0 cr)
- SOC 3721 - Principles of Social Psychology (3.0 cr)
- SOC 4090 - Topics in Sociology (3.0 cr)
- SOC 4246 - Sociology of Health and Illness (3.0 cr)
- SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
- SOC 4511 - Sociology of Children & Youth (3.0 cr)
- SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
- SOC 5090 - Topics in Sociology (1.0 - 3.0 cr)
- SOC 5455 - Sociology of Education (3.0 cr)
- SOC 3211W - Race and Racism in the US [DSJ, WI] (3.0 cr)
  or AAS 3211W - Race & Racism in the U.S. [DSJ, WI] (3.0 cr)
- SOC 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
  or GLOS 3215 - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
- SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
  or SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
- SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- SOC 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
  or RELS 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
- SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
  or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
- SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  or GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  or AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
- SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)
  or GLOS 3505 - Migrations: People in Motion [GP] (3.0 cr)
- SOC 3511 - World Population Problems [GP] (3.0 cr)
  or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
- SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
  or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
  or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
- SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
  or GLOS 4305 [Inactive] [ENV] (3.0 cr)
- SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
  or SOC 4309H - Honors: Religion in American Public Life - Culture, Politics, & Communities [CIV] (3.0 cr)
  or RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
- SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
  or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
- SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
  or GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
- SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
  or SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
- SOC 4511 - Terrorist Networks & Counterterror Organizations (3.0 cr)
  or SOC 4451 - Sport, Culture & Society (3.0 cr)
  or SOC 4451H - Honors: Sport, Culture & Society (3.0 cr)
- SOC 4521 - Love, Sex, & Marriage (3.0 cr)
  or SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
- SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
  or SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
- LCD 31xx Courses
  Take 0 or more course(s) from the following:
  - SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  - SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  - SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
- LCD 41xx Courses
  Take 2 or more course(s) from the following:
  - SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
  - SOC 4106 - Crime on TV (3.0 cr)
• SOC 4108 - Current Issues in Crime Control (3.0 cr)
• SOC 4111 - Deviant Behavior (3.0 cr)
• SOC 4114 - Women & the Criminal Justice System (3.0 cr)
• SOC 4125 - Policing America (3.0 cr)
• SOC 4142 (Inactive) (3.0 cr)
• SOC 4149 - Sociology of Killing (3.0 cr)
• SOC 4161 - Criminal Law in American Society (3.0 cr)
• SOC 4162 - Criminal Procedure in American Society (3.0 cr)
• SOC 4190 - Topics in Sociology With Law, Criminology, and Deviance Emphasis (3.0 cr)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4102 - Criminology (3.0 cr)
or SOC 4102H - Honors: Criminology (3.0 cr)
• SOC 4104 - Crime and Human Rights (3.0 cr)
or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
or SOC 5104 - Crime and Human Rights (3.0 cr)
or GLOS 4104 - Crime and Human Rights (3.0 cr)
or GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
or GLOS 5104 - Crime and Human Rights (3.0 cr)
• SOC 4135 - Sociology of White-Collar Crime (3.0 cr)
or SOC 4135H - Honors: Sociology of White-Collar Crime (3.0 cr)
• SOC 4141 - Juvenile Delinquency (3.0 cr)
or SOC 4141H - Honors: Juvenile Delinquency (3.0 cr)
• SOC 4171 - Sociology of International Law: Human Rights & Trafficking [GP] (3.0 cr)
or GLOS 4406 (Inactive) [GP] (3.0 cr)

Capstone
In the capstone, students will emphasize the relationship between a sociological perspective and critical thinking, effective communication, and meaningful civic engagement.

Before beginning the capstone, students must be a declared major and have completed all major coursework except one sociology elective course. Students are strongly advised to contact the department at least two semesters in advance of registration to ensure they are on the capstone wait list.

Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the sociology capstone, but they do need to replace the 3 credits with another sociology elective course.

Seminar
This course is designed to: a) provide students with an opportunity to reflect on what they have learned as a sociology major; b) use that knowledge to write sociological analyses based on community service learning; and c) think about how the knowledge, skills, and insights of the sociological enterprise can be used and applied outside of the University.

SOC 4966W - Capstone Experience: Seminar [WI] (3.0 cr)
or Directed Research (4 cr.)
SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)

or Directed Research (1 cr.) with SOC elective
SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
The additional sociology elective must be pre-approved by the department advisor.
SOC 3xxx
or SOC 4xxx
or SOC 5xxx

or Honors
Students seeking Honors in Sociology should take both proseminars in their senior year.
SOC 4977V - Honors Capstone Experience: Proseminar I [WI] (3.0 cr)
SOC 4978V - Honors Capstone Experience: Proseminar II [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
SOC 3301W - Politics and Society [WI] (3.0 cr)
SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
SOC 3411W - Organizations and Society [WI] (3.0 cr)
SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
SOC 3451W - Cities & Social Change [WI] (3.0 cr)
Program Sub-plans
Students are required to complete one of the following sub-plans.

Organization, Business, or Non-Profit
Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses
Note: ECON 1101 & 1102 are strongly recommended as prerequisites for most of the following courses. Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:

• ABUS 3301 - Introduction to Quality Management (3.0 cr)
• ABUS 4022W - Management in Organizations [WI] (3.0 cr)
• ABUS 4023W - Communicating for Results [WI] (3.0 cr)
• ABUS 4041 - Dynamics of Leadership (3.0 cr)
• ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
• ABUS 4104 - Management and Human Resource Practices (3.0 cr)
• ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
• ABUS 4509 - New Product Development (3.0 cr)
• ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
• ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
• ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• AMIN 4511 - Indigenous Political Economies (3.0 cr)
• AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
• ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)
• APEC 3511W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• APEC 3821 - Retail Center Management (3.0 cr)
• APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
• APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• COMM 3411 - Introduction to Small Group Communication (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• FINA 3001 - Finance Fundamentals (3.0 cr)
• FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• INS 4105 - Corporate Risk Management (2.0 cr)
• LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
• LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
Health Care and Careers
Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:
- ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- ADDS 5081 - Multicultural Foundations of Behavioral Health (3.0 cr)
- ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
- ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
- CSPH 5115 - Cultural Awareness, Knowledge and Health (3.0 cr)
- CSPH 5121 - Whole Systems Healing: Health and the Environment (2.0 cr)
- CSPH 5641 - Animals in Health Care: The Healing Dimensions of Human/Animal Relationships (3.0 cr)
- FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
- HMED 3002W - Health Care in History II [HIS, WI] (4.0 cr)
- HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
- HMED 3055 - Women, Health, and History [HIS, DSJ] (3.0 cr)
- JOUR 5541 - Mass Communication and Public Health (3.0 cr)
- KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
- OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
- OLPD 3621 - Introduction to Training and Development (3.0 cr)
- OLPD 3641 - Introduction to Organization Development (3.0 cr)
- OLPD 3828 - Diversity in the Workplace (3.0 cr)
- PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
- PHAR 4204W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
- PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
- PUBH 3351 - Epidemiology: People, Places, and Disease (2.0 cr)
- PUBH 3601 - Maternal and Child Health Global Public Health Issues (2.0 cr)
- PUBH 3801 - Health Economics and Policy (3.0 cr)
- SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
- SW 3703 - Gender Violence in Global Perspective (3.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Policy Analysis
Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:
• AFRO 3426 - African Americans, Social Policy, and the Welfare State (3.0 cr)
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
• APEC 3002 - Managerial Economics (4.0 cr)
• APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
• APEC 3841 - Agricultural Cooperatives and Muturals (3.0 cr)
• APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
• GWSS 3590 [Inactive] (3.0 cr)
• HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity (Field Seminar) (4.0 cr)
• ID 3896 - Internship Reflection: Making Meaning of Your Experience (1.0 cr)
• LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
• LEAD 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
• OLDP 3336 [Inactive] [CIV] (3.0 cr)
• OLDP 3381 - Developing Intercultural Competence (3.0 cr)
• PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• PA 4190 - Topics in Public and Nonprofit Leadership and Management (1.0 - 3.0 cr)
• PHIL 3304 - Law and Morality (4.0 cr)
• POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
• POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
• POL 3309 - Justice in America (3.0 cr)
• POL 3319 - Education and the American Dream [SOCS, DSJ] (3.0 cr)
• POL 3321 - Issues in American Public Policy (3.0 cr)
• POL 3325 - U.S. Campaigns and Elections (3.0 cr)
• POL 3464 - The Politics of Economic Inequality (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
• POL 3489W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
• POL 3766 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
• POL 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
• POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
• POL 3785H [Inactive] (3.0 cr)
• POL 4495 [Inactive] [DSJ] (3.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 4771 - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
• POL 4773W - Advocacy Organizations, Social Movements, and the Politics of Identity [DSJ, WI] (3.0 cr)
• PUBH 3801 - Health Economics and Policy (3.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
• WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
  or ECON 3101 - Intermediate Microeconomics (4.0 cr)
• APEC 3006 - Applied Microeconomics: Government and the Economy (3.0 cr)
  or ECON 3102 - Intermediate Macroeconomics (4.0 cr)
• AMIN 3501 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  or POL 3701 - Indigenous Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
  or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  or GLOS 3701W - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
  or RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
• PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
  or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Quantitative Emphasis
Some courses require prerequisites, consult the university catalog for more information.

Supportive Field Courses
Note: MATH 1272 is a required prerequisite for most of the following courses. MATH 1272 carries a prerequisite of MATH 1271. Students who are interested in this sub-plan should take MATH 1271 instead of MATH 1142 in order to complete these course sequences in a timely fashion.

Take 4 or more course(s) totaling 12 or more credit(s) from the following:
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• HIST 5970 - Advanced Research in Quantitative History (4.0 cr)
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
• MATH 2263 - Multivariable Calculus (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
• POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
• PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
• PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
• PSY 5865 - Advanced Psychological and Educational Measurement (4.0 cr)
• PUBH 3351 - Epidemiology: People, Places, and Disease (2.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• HIST 3011 - Measuring the Past: Quantitative Methods for Historical Research [MATH] (4.0 cr)
  or HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research (4.0 cr)
• HIST 3797 - History of Population [SOCS, GP] (3.0 cr)
  or HIST 5797 - Methods of Population History (3.0 cr)
Twin Cities Campus
Sociology of Law, Criminology, and Deviance Minor

Sociology
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 17

Sociologists study human social behavior. More specifically, sociology examines how we group ourselves (families, social groups, formal organizations, societies); how we behave in groups (collective action, social change, crime and delinquency); and how characteristics like age, race, social class, and gender affect our relationships with each other and with organizations and institutions.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students who are interested in this minor are encouraged to schedule a meeting with the departmental advisor to discuss the minor and its requirements.

For more information, visit the sociology website for undergraduates at http://cla.umn.edu/sociology/undergraduate
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
At least 8 upper division credits in the minor must be taken at the University of Minnesota - Twin Cities campus.

A given course may only count towards one minor requirement.

Students may earn no more than one undergraduate degree from the Department of Sociology: a BA or BS or minor in sociology; or a BA or BS or minor in sociology of law, criminology, and deviance.

Core Courses
Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:

Law, Criminology, and Deviance Preparatory Course
• SOC 1101 - Law, Crime, & Punishment (3.0 cr)
  or SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  or SOC 3102 - Criminal Behavior and Social Control (3.0 cr)

Social Theory
• SOC 3701 - Social Theory (4.0 cr)

Law, Criminology, and Deviance Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

3xxx-Level LCD Electives
Take 0 - 1 course(s) from the following:
• SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• SOC 3102 - Criminal Behavior and Social Control (3.0 cr)

Advanced LCD Electives
Take 1 - 2 course(s) from the following:
• SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
• SOC 4106 - Crime on TV (3.0 cr)
• SOC 4108 - Current Issues in Crime Control (3.0 cr)
• SOC 4111 - Deviant Behavior (3.0 cr)
• SOC 4114 - Women & the Criminal Justice System (3.0 cr)
• SOC 4125 - Policing America (3.0 cr)
• SOC 4142 (Inactive)(3.0 cr)
• SOC 4149 - Sociology of Killing (3.0 cr)
• SOC 4161 - Criminal Law in American Society (3.0 cr)
• SOC 4162 - Criminal Procedure in American Society (3.0 cr)
• SOC 4190 - Sociology of Law [WI] (3.0 cr)
  or SOC 4191V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4102 - Criminology (3.0 cr)
  or SOC 4102H - Honors: Criminology (3.0 cr)
• SOC 4104 - Crime and Human Rights (3.0 cr)
  or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
• SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
• SOC 4135 - Sociology of White-Collar Crime (3.0 cr)
  or SOC 4135H - Honors: Sociology of White-Collar Crime (3.0 cr)
• SOC 4141 - Juvenile Delinquency (3.0 cr)
  or SOC 4141H - Honors: Juvenile Delinquency (3.0 cr)
• SOC 4171 - Sociology of International Law: Human Rights & Trafficking [GP] (3.0 cr)
  or GLOS 4406 (Inactive) [GP] (3.0 cr)

Other Elective
No more than one 1xxx-level course may count towards the minor. If a 1xxx-level course counted as towards the Core Courses requirement, take a 2xxx, 3xxx, 31xx, 4xxx or 41xx-level course to fulfill this requirement.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:

Lower-Division
Take 0 - 1 course(s) from the following:
• SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
  or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)
• SOC 1101 - Law, Crime, & Punishment (3.0 cr)

Upper Division
Take 0 - 1 course(s) from the following:
• GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
• GCC 3018 - What American Dream? Children of the Social Class Divide [DSJ] (3.0 cr)
• SOC 3003 - Social Problems (3.0 cr)
• SOC 3095 - Topics in Sociology (3.0 cr)
• SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
• SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
• SOC 3221 - Sociology of Gender (3.0 cr)
• SOC 3241 - Sociology of Women's Health: Experiences from Around the World (3.0 cr)
• SOC 3301W - Law, Crime, & Punishment (3.0 cr)
• SOC 3301W - Politics and Society [WI] (3.0 cr)
• SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 3341W - Organizations and Society [WI] (3.0 cr)
• SOC 3341W - Consumerism: The Sociology of Consumption (3.0 cr)
• SOC 3341W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
• SOC 3346 - Comparing Healthcare Systems [GP] (3.0 cr)
• SOC 3351W - Cities & Social Change [WI] (3.0 cr)
• SOC 3352 - Education and Society (3.0 cr)
• SOC 3358 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 3359 - Immigration to the United States: Beyond Walls [DSJ] (3.0 cr)
• SOC 3364 - Understanding New Zealand: Culture, Society, and Environment [GP, CIV] (3.0 cr)
• SOC 3365 - Chinese Society: Culture, Networks, & Inequality (3.0 cr)
• SOC 3372 - Principles of Social Psychology (3.0 cr)
• SOC 3380 - Sociological Research Methods (4.0 cr)
• SOC 3381 - Social Statistics [MATH] (4.0 cr)
• SOC 3390 - Topics in Sociology (3.0 cr)
• SOC 3405 - Sociology of Punishment and Corrections (3.0 cr)
• SOC 3406 - Crime on TV (3.0 cr)
• SOC 3408 - Current Issues in Crime Control (3.0 cr)
• SOC 3411 - Deviant Behavior (3.0 cr)
• SOC 4114 - Women & the Criminal Justice System (3.0 cr)
• SOC 4125 - Policing America (3.0 cr)
• SOC 4142 (Inactive) (3.0 cr)
• SOC 4149 - Sociology of Killing (3.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SOC 4161</td>
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<td>SOC 4162</td>
<td>Criminal Procedure in American Society</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 4190</td>
<td>Topics in Sociology With Law, Criminology, and Deviance Emphasis</td>
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<td>SOC 4246</td>
<td>Sociology of Health and Illness</td>
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<td>SOC 4461</td>
<td>Sociology of Ethnic and Racial Conflict [DSJ]</td>
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<td>SOC 4511</td>
<td>Sociology of Children &amp; Youth</td>
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<td>SOC 4821</td>
<td>Measuring the Social World: Concepts and Analysis</td>
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<td>SOC 4881</td>
<td>Population Studies Research Practicum</td>
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<tr>
<td>SOC 5090</td>
<td>Topics in Sociology</td>
<td>1.0 - 3.0 cr</td>
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<tr>
<td>SOC 5455</td>
<td>Sociology of Education</td>
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<tr>
<td>SOC 5811</td>
<td>Social Statistics for Graduate Students [MATH]</td>
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<td>SOC 3101</td>
<td>Sociological Perspectives on the Criminal Justice System [CIV]</td>
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<tr>
<td>SOC 3101H</td>
<td>Honors: Sociological Perspectives on the Criminal Justice System [CIV]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 3215</td>
<td>Supercapitalism: Labor, Consumption &amp; the Environment in the New Global Economy</td>
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<tr>
<td>SOC 3215V</td>
<td>Honors: Supercapitalism: Labor, Consumption &amp; the Environment in the New Global Economy</td>
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<td>SOC 3221</td>
<td>Race and Racism in the US [DSJ, WI]</td>
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<td>SOC 3246</td>
<td>Diseases, Disasters &amp; Other Killers [HIS, ENV]</td>
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<tr>
<td>SOC 5246</td>
<td>Disease, Disasters, and Other Killers [HIS, ENV]</td>
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<tr>
<td>SOC 3251W</td>
<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI]</td>
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<tr>
<td>SOC 3251</td>
<td>Honors: Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI]</td>
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<tr>
<td>SOC 3309</td>
<td>Atheists &amp; Others: Religious Outsiders in the United States [DSJ]</td>
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<tr>
<td>SOC 3309V</td>
<td>Honors: Atheists &amp; Others: Religious Outsiders in the United States [DSJ]</td>
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<tr>
<td>SOC 3412</td>
<td>Social Networking: Theories and Methods [TS]</td>
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<tr>
<td>SOC 3412H</td>
<td>Honors: Social Networking: Theories and Methods [TS]</td>
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<td>SOC 3417W</td>
<td>Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI]</td>
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<td>SOC 3415W</td>
<td>Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI]</td>
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<td>SOC 3503</td>
<td>Asian American Identities, Families &amp; Communities [SOCS, DSJ]</td>
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<tr>
<td>SOC 3503H</td>
<td>Honors: Asian American Identities, Families &amp; Communities [SOCS, DSJ]</td>
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<td>Asian American Identities, Families, &amp; Communities [SOCS, DSJ]</td>
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<td>SOC 3505</td>
<td>Migrations: People in Motion [GP]</td>
<td>3.0 cr</td>
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<td>SOC 3511</td>
<td>World Population Problems [GP]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 3511H</td>
<td>Honors: World Population Problems [GP]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 3613W</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
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<td>SOC 3613V</td>
<td>Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
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<td>GWS 3916</td>
<td>Gender and the Family in the Islamic World</td>
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<td>SOC 4101V</td>
<td>Honors: Sociology of Law [WI]</td>
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<tr>
<td>SOC 4102</td>
<td>Criminology</td>
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<td>Crime and Human Rights</td>
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<td>Juvenile Delinquency</td>
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<td>Honors: Juvenile Delinquency</td>
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<td>SOC 4171</td>
<td>Sociology of International Law: Human Rights &amp; Trafficking [GP]</td>
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<td>SOC 4305</td>
<td>Environment &amp; Society: An Enduring Conflict [ENV]</td>
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<td>SOC 4309</td>
<td>Religion in American Public Life: Culture, Politics, &amp; Communities [CIV]</td>
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<td>SOC 4309H</td>
<td>Honors: Religion in American Public Life: Culture, Politics, &amp; Communities [CIV]</td>
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<td>RELS 4309</td>
<td>Religion in American Public Life: Culture, Politics, and Communities [CIV]</td>
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or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
• SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
  • SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 5411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4451 - Sport, Culture & Society (3.0 cr)
  • SOC 4451H - Honors: Sport, Culture & Society (3.0 cr)
• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
  • SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
  • SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
Twin Cities Campus
Spanish and Portuguese Studies B.A.
Spanish & Portuguese Studies
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 35 to 79
• Degree: Bachelor of Arts

The program develops analytical skills and methodologies needed to explore Hispanic, Hispanic-American, and Luso-Brazilian languages and cultures. The department offers two majors (Spanish studies and combined Spanish-Portuguese studies) and two minors (Spanish studies and Portuguese studies).

It is important to note that department majors and minors are not simply Spanish and Portuguese language programs; rather, they are liberal arts programs concentrating on Spanish, Latin American, and/or Luso-Brazilian literary, cultural, and linguistics studies with language skills as the foundation. All major and minor options in this department begin with prerequisite language courses, followed by advanced language skills courses (special arrangements may be made for native speakers of Spanish or Portuguese). These are followed by critical analysis skills courses in Hispanic/Lusophone literature, culture, and linguistics that prepare students to take advanced coursework in specific areas. The major options culminate in the completion of a senior project through a SPAN 5xxx course, a PORT 5xxx course, or SPAN 3972W.

The department strongly encourages majors and minors to study abroad in a Spanish- or Portuguese-speaking country or territory. Students who wish to complete department program requirements through study abroad must meet with the department advisor prior to departure. Detailed information regarding undergraduate Spanish and Portuguese studies academic issues is printed in the Undergraduate Advising Handbook (also available at http://spanport.cla.umn.edu).

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to complete 4 semester(s) of Spanish and Portuguese with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

The Spanish and Portuguese Studies BA requires 5-6 semesters of language above and beyond the CLA second language requirement.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Spanish and Portuguese Studies BA is SPAN.

The Spanish and Portuguese Studies BA is completed with a minimum of 35 credits and 11 courses:
-0-40 credits (0-8 courses) of preparatory coursework
-35 credits (11 courses) beyond the preparatory courses (excludes PORT 3001)

Majors are required to study abroad in a Spanish or Portuguese speaking country or territory for at least 6 weeks or take a semester-long service learning course.
At least 6 upper division courses in the major must be taken in residence. As many as three of these courses can be study abroad courses taken for resident credit, through a department-sponsored or affiliated study abroad program. The other three courses must be taken on campus and must be advanced courses, which for Spanish are those beyond the critical analysis courses, and for Portuguese are those beyond PORT 3001.

The Spanish and Portuguese Studies BA may be combined with the Spanish Language Advanced Level Proficiency Certificate.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Preparatory Courses**
Choose from the following two options: (1) complete the Spanish language sequence and PORT 3001, or (2) complete the Spanish language sequence and the Portuguese language sequence. Students may start above SPAN 1001 based on language placement.

Take 0 - 8 course(s) totaling 0 - 40 credit(s) from the following:

- **Option 1**
  - SPAN 1001 - Beginning Spanish (5.0 cr)
  - SPAN 1002 - Beginning Spanish (5.0 cr)
  - SPAN 1022 - Alternate Second-Semester Spanish (5.0 cr)
  - SPAN 1003 - Intermediate Spanish (5.0 cr)
  - SPAN 1004 - Intermediate Spanish (5.0 cr)
  - SPAN 1014 - Business Spanish (5.0 cr)
  - SPAN 1044 - Intermediate Medical Spanish (5.0 cr)
  - PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)

- **Option 2**
  - SPAN 1001 - Beginning Spanish (5.0 cr)
  - SPAN 1002 - Beginning Spanish (5.0 cr)
  - SPAN 1022 - Alternate Second-Semester Spanish (5.0 cr)
  - SPAN 1003 - Intermediate Spanish (5.0 cr)
  - SPAN 1004 - Intermediate Spanish (5.0 cr)
  - SPAN 1014 - Business Spanish (5.0 cr)
  - SPAN 1044 - Intermediate Medical Spanish (5.0 cr)
  - PORT 1101 - Beginning Portuguese (5.0 cr)
  - PORT 1102 - Beginning Portuguese (5.0 cr)
  - PORT 1103 - Intermediate Portuguese (5.0 cr)
  - PORT 1104 - Intermediate Portuguese (5.0 cr)

**Advanced Language Courses**
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

- PORT 3003 - Portuguese Conversation and Composition (4.0 cr)
- SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- or SPAN 3015V - Honors: Spanish Composition and Communication [WI] (4.0 cr)

**Critical Analysis and Cultural Foundation Courses**
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:

- PORT 3501W - Global Portuguese: 1300-1900 [WI] (3.0 cr)
- PORT 3502W - Global Portuguese: 1900-present [WI] (3.0 cr)
- SPAN 3104W - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- or SPAN 3104V - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)

**Spanish Studies Electives**
1 of the 2 Spanish Studies Electives must have a Critical Analysis prerequisite (SPAN 3104W/V, SPAN 3105W/V, or SPAN 3107W). Students completing an Honors thesis in Spanish and Portuguese Studies must take at least one SPAN/PORT 5xxx course. The 5xxx-level course will count as either a Spanish or Portuguese elective, depending on the course.

Take 2 or more course(s) totaling exactly 6 credit(s) from the following:

- **Spanish Electives with a Critical Analysis prerequisite**
  - Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:
    - SPAN 3211 - Interpreting Imperial Spain, 1492-1800 (3.0 cr)
    - SPAN 3221 - Interpreting Colonial Latin America: Empire and Early Modernity (3.0 cr)
    - SPAN 3222 - Interpreting Modern and Contemporary Latin America (3.0 cr)
    - SPAN 3301 - Advanced Oral Proficiency Workshop (3.0 cr)
    - SPAN 3502 - Modern Spain (3.0 cr)
    - SPAN 3503 - Pre-modern Spanish Culture and Thought [HIS] (3.0 cr)
    - SPAN 3510 - Issues in Hispanic Cultures (3.0 cr)
    - SPAN 3512 - Modern Latin America (3.0 cr)
    - SPAN 3701 - Structure of Spanish: Phonology and Phonetics (3.0 cr)
• SPAN 3702 - Structure of Spanish: Morphology and Syntax (3.0 cr)
• SPAN 3703 - Origins and History of Spanish and Portuguese (3.0 cr)
• SPAN 3704 - Sociolinguistics of the Spanish-Speaking World (3.0 cr)
• SPAN 3706 - Spanish Applied Linguistics (3.0 cr)
• SPAN 3707 - Linguistic Accuracy Through Translation (3.0 cr)
• SPAN 3730 - Topics in Hispanic Linguistics (3.0 cr)
• SPAN 3800 - Film Studies in Spanish (3.0 cr)
• SPAN 3910 - Topics in Spanish Peninsular Literature (3.0 cr)
• SPAN 3920 - Topics in Spanish-American Literature (3.0 cr)

Spanish Electives without a Critical Analysis prerequisite
Take 0 - 1 course(s) totaling 0 - 3 credit(s) from the following:
• SPAN 3022 - Advanced Business Spanish (4.0 cr)
• SPAN 3044 - Advanced Medical Spanish (4.0 cr)
• SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
• SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
or SPAN 3105V - Honors: Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)

Portuguese Studies Electives
Students completing an Honors thesis in Spanish and Portuguese Studies must take at least one SPAN/PORT 5xxx course. The 5xxx-level course will count as either a Spanish or Portuguese elective, depending on the course. Note: PORT 3001 is a preparatory course, and will not count as an elective.

Portuguese Electives
Take 2 or more course(s) totaling exactly 6 credit(s) from the following:
• PORT 3800 - Film Studies in Portuguese (3.0 cr)
• PORT 3910 - Topics in Lusophone Literatures (3.0 cr)
• PORT 3920 (Inactive) (3.0 cr)

Study Abroad or Service Learning
Students must enroll in a minimum 6-week study abroad experience, or a semester-long SPAN service learning course.

Study Abroad
The study abroad requirement must be fulfilled in a Spanish or Portuguese-speaking country or territory, involve at least one 3-credit course taught in Spanish or Portuguese, and include courses related to Spanish/Portuguese studies. Students must meet with the departmental advisor prior to departure.

Service Learning
The service learning requirement must be fulfilled by one of the following courses, taught during a full semester.
• SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
• Other course with advisor consent

Capstone
A primary focus of the Capstone is sustained research. Students completing their Honors thesis in Spanish and Portuguese Studies must enroll in SPAN 3972W.

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
Students who double major in CLA and choose to complete the capstone requirement in their other major may waive the Spanish and Portuguese Studies BA capstone, but they do need to replace the 3 credits with another Spanish elective with a Critical Analysis prerequisite, or a PORT 3xxx/5xxx elective (excludes PORT 3001). Students whose other major is outside of CLA must complete the Spanish and Portuguese Studies capstone.

• SPAN 3972W
  Span 3972W involves a semester-long research project in which the student, in consultation with the course's faculty member, selects a topic related to Spanish and/ or Portuguese literature, culture, or linguistics; carries out research on that topic; and presents the results of this research in the form of a research paper (typically 20-25 pages) written in Spanish or Portuguese.

• SPAN 3972W - Graduation Seminar [WI] (3.0 cr)

• SPAN/PORT/SPPT 5xxx
  With instructor permission, students may enroll in a SPAN/PORT/SPPT 5xxx course to fulfill the capstone requirement. 5xxx-level courses generally include sustained research through extensive reading throughout the semester and writing and/or presentations based on the content of the course.
  • PORT 5xx
  • SPAN 5xx
  • SPPT 5xx

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill...
other major requirements.
Take 0 - 1 course(s) from the following:
• PORT 3501W - Global Portuguese: 1300-1900 [WI] (3.0 cr)
• PORT 3502W - Global Portuguese: 1900-present [WI] (3.0 cr)
• SPAN 3015V - Honors: Spanish Composition and Communication [WI] (4.0 cr)
• SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
• SPAN 3104V - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
• SPAN 3104W - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
• SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
• SPAN 3972W - Graduation Seminar [WI] (3.0 cr)
Twin Cities Campus
Spanish Language Advanced-Level Proficiency Certificate
Spanish & Portuguese Studies
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 6 to 8
- This certificate requires an intensive Spanish-language immersion experience. See certificate requirements for the options to fulfill this requirement.
- Degree: Spanish Language Advanced-Level Proficiency Cert

This certificate is designed for students interested in achieving advanced-level proficiency in Spanish and having their skills formally recognized. People who have advanced-level proficiency in Spanish possess the speaking, reading, writing and listening skills sufficient to satisfy the requirements of everyday situations at home and at work. They also generally understand and are understood by native speakers of Spanish. For an extended definition of advanced-level proficiency, please visit the American Council on the Teaching of Foreign Languages website: www.actfl.org/sites/default/files/pdfs/ACTFLProficiencyGuidelines2012_FINAL.pdf

The Certificate of Advanced-Level Proficiency is open to all University of Minnesota undergraduate students, especially those who seek higher levels of Spanish proficiency in order to become more competitive for graduate or professional programs, careers with domestic Spanish-speaking populations, or international careers.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
The Spanish Language Advanced Level Proficiency Certificate may be combined with any departmental degree program.

Spanish LPE
Pass the Spanish Language Proficiency Exam (LPE). This exam is typically taken after 4 semesters of college-level study, or the equivalent. For more information, please visit http://langtest.umn.edu/lpe.

Composition, Communication and Content-Based courses
Take SPAN 3015W/V or equivalent, and one pre-approved content-based course, or two content-based courses. Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:

Spanish Composition and Communication
Take 0 - 1 course(s) from the following:
- SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- SPAN 3015V - Honors: Spanish Composition and Communication [WI] (4.0 cr)
- ARGN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- ECDR 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- TLDO 3231 - Spanish Composition and Communication (3.0 - 4.0 cr)

Pre-approved content-based courses
A content-based course is defined as a course of at least 3 credits that is focused on academic discipline, and taught almost exclusively in Spanish, or for which the discussion section is delivered in Spanish. A minimum of 10 pages of written work in Spanish must be completed, including a single assignment of at least 5 pages. Contact the Spanish and Portuguese Studies advisors about counting a course towards this requirement that is not listed below.
Take 1 - 2 course(s) from the following:
- SPAN 3104W - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)

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Information current as of September 02, 2020
or SPAN 3104V - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
or ARGN 3104W - Introduction to the Study of Hispanic Literatures [WI] (3.0 cr)
or TLDO 3104W - Art of Reading Literary Texts [WI] (3.0 cr)

• SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
or TLDO 3105W - Cultural Heritage of Spain [WI] (3.0 cr)
• SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
or TLDO 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
• other pre-approved content-based course

Spanish Language Immersion
Participate in an intensive university level Spanish-language immersion experience. There are two options for completing this requirement:

Option 1
Participate in an academic study abroad experience in a Spanish speaking country or territory that is at least 6 weeks in length and has at least one course taught in Spanish

or

Option 2
Completion of a pre-approved semester-long immersion experience. Non-semester-long versions of these courses do not count towards the Spanish Language Immersion requirement. Non-study abroad immersion options include:

- SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
- SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
- Participation in the Community Engagement Scholars Program, with a focus on opportunities to engage with native Spanish speakers (requires 400 service hours)
- Other option approved by the Director of Undergraduate Studies for the Department of Spanish and Portuguese Studies

Self-assessment Instrument
Take the self-assessment and use this information to gauge your own proficiency level. It is strongly recommended that you do not attempt the ACTFL exam until the self-assessment results indicate that you may have achieved advanced-level proficiency.

Critical Reflection Essay
Upon completing all foregoing requirements, submit and pass a short essay (of 450-600 words) written in English that is both a self-assessment of your Spanish-language skills and also explains how you have used your language and cultural understanding skills at the university and beyond. Show that you have engaged in critical reflection on the learning process and developed the tools for continued language acquisition. Cite specific experiences to illustrate your linguistic growth.

Achieve Advanced-Low or Higher on the Spanish ACTFL
Pass the ACTFL advanced-level exam in Spanish by achieving a rating of Advanced-Low or higher in all four sections:
- Speaking
- Writing
- Listening
- Reading

Additional Recommended Experiences to Enhance Spanish-Language Proficiency
- Study abroad in a Spanish-speaking country for at least 1 semester
- Service learning in a Spanish-speaking community for at least 1 semester
- Participate in the Community Engagement Scholars Program and work with native Spanish speakers
- Participate in TandemPlus
- Take extra upper-division courses taught in Spanish
- Take the self-assessment test periodically
- Spend approximately 15-20 hours per week outside of class actively using Spanish (reading, writing, speaking, listening)
**Twin Cities Campus**

**Spanish Studies B.A.**  
*Spanish & Portuguese Studies*  
**College of Liberal Arts**

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2020  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 34 to 54  
- Degree: Bachelor of Arts

The program develops analytical skills and methodologies needed to explore Hispanic and Hispanic-American languages and cultures.

It is important to note that department majors and minors are not simply Spanish and Portuguese language majors or minors; rather, they are liberal arts majors and minors concentrating on Spanish, Latin American, and/or Luso-Brazilian literary, cultural, and linguistic studies with language skills at the foundation. All major and minor options in this department begin with prerequisite language courses, followed by advanced language skills courses (special arrangements may be made for native speakers of Spanish or Portuguese). These are followed by critical analysis skills courses in Hispanic literature, culture, and linguistics that prepare students to take advanced coursework in specific areas. The major options culminate in the completion of a senior project through a SPAN 5xxx course or SPAN 3972W.

Majors are required to enroll in a minimum 6-week study abroad experience, or a semester-long service learning course. The study abroad requirement must be fulfilled in a Spanish-speaking country or territory, involve at least one three-credit course taught in Spanish, and include courses related to Spanish studies. Students must meet with the department advisor prior to departure. The service learning requirement is fulfilled by semester-long SPAN 3401, or SPAN 3404, or other courses with advisor consent.

Detailed information regarding Spanish and Portuguese studies undergraduate academic issues is printed in the Undergraduate Advising Handbook (available at http://spanport.cla.umn.edu).

**Program Delivery**

This program is available:  
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Students are required to complete 4 semester(s) of Spanish with a grade of C- or better, or demonstrate proficiency in the language(s) as defined by the department or college.

The Spanish Studies BA requires at least 5-6 semesters of language above and beyond the CLA second language requirement.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Spanish Studies BA is SPAN.

The Spanish Studies B.A. is completed with a minimum of 34-54 credits and 11-15 courses:

- 0-20 credits (0-4 courses) of preparatory coursework (SPAN 1001-1004 or equivalent)
- 34 credits (11 courses) beyond the preparatory courses

Majors are required to study abroad in a Spanish speaking country or territory for at least 6 weeks or take a semester-long service learning course.
At least 6 upper-division courses in the major must be taken in residence. As many as three of these courses can be study abroad courses taken for resident credit, through a department-sponsored or affiliated study abroad program. The other three courses must be taken on campus and must have a Critical Analysis course as a prerequisite.

The Spanish Studies BA may be combined with the Portuguese Studies minor, and/or the Spanish Language Advanced Level Proficiency Certificate.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Preparatory Coursework
These courses (20 credits), or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.

Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- SPAN 1001 - Beginning Spanish (5.0 cr)
- SPAN 1002 - Beginning Spanish (5.0 cr)
- or SPAN 1022 - Alternate Second-Semester Spanish (5.0 cr)
- SPAN 1003 - Intermediate Spanish (5.0 cr)
- SPAN 1004 - Intermediate Spanish (5.0 cr)
- or SPAN 1014 - Business Spanish (5.0 cr)
- or SPAN 1044 - Intermediate Medical Spanish (5.0 cr)

Advanced Language Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- • SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- or SPAN 3015V - Honors: Spanish Composition and Communication [WI] (4.0 cr)

Critical Analysis Courses
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- • SPAN 3104W - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- or SPAN 3104V - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- • SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- or SPAN 3105V - Honors: Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- • SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)

Spanish Studies Electives
5 of the 7 Electives must have a Critical Analysis prerequisite (SPAN 3104W/V, SPAN 3105W/V, or SPAN 3107W). Up to 1 approved course taught in English with coursework completed in Spanish can count as an elective without a Critical Analysis prerequisite. Written departmental consent is required during the first week of class. Students completing an Honors thesis in Spanish Studies must take at least one SPAN 5xxx. The 5xxx-level course will count as a Spanish Studies elective.

Take 7 or more course(s) totaling 21 - 23 credit(s) from the following:

Electives with a Critical Analysis prerequisite
Take 5 - 7 course(s) from the following:
- • SPAN 3211 - Interpreting Imperial Spain, 1492-1800 (3.0 cr)
- • SPAN 3221 - Interpreting Colonial Latin America: Empire and Early Modernity (3.0 cr)
- • SPAN 3222 - Interpreting Modern and Contemporary Latin America (3.0 cr)
- • SPAN 3301 - Advanced Oral Proficiency Workshop (3.0 cr)
- • SPAN 3502 - Modern Spain (3.0 cr)
- • SPAN 3503 - Pre-modern Spanish Culture and Thought [HIS] (3.0 cr)
- • SPAN 3510 - Issues in Hispanic Cultures (3.0 cr)
- • SPAN 3512 - Modern Latin America (3.0 cr)
- • SPAN 3701 - Structure of Spanish: Phonology and Phonetics (3.0 cr)
- • SPAN 3702 - Structure of Spanish: Morphology and Syntax (3.0 cr)
- • SPAN 3703 - Origins and History of Spanish and Portuguese (3.0 cr)
- • SPAN 3704 - Sociolinguistics of the Spanish-Speaking World (3.0 cr)
- • SPAN 3706 - Spanish Applied Linguistics (3.0 cr)
- • SPAN 3707 - Linguistic Accuracy Through Translation (3.0 cr)
- • SPAN 3730 - Topics in Hispanic Linguistics (3.0 cr)
- • SPAN 3800 - Film Studies in Spanish (3.0 cr)
- • SPAN 3910 - Topics in Spanish Peninsular Literature (3.0 cr)
- • SPAN 3920 - Topics in Spanish-American Literature (3.0 cr)

Additional Electives without a Critical Analysis prerequisite
SPAN 3104W/V, SPAN 3105W/V, or SPAN 3107W may only count as an Elective without a Critical Analysis prerequisite if they have not counted towards the Critical Analysis Courses requirement.

Take 0 - 2 course(s) from the following:
Take 0 - 2 course(s) from the following:
- PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)
- SPAN 3022 - Advanced Business Spanish (4.0 cr)
- SPAN 3044 - Advanced Medical Spanish (4.0 cr)
- SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
- SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)

Take 0 - 1 course(s) from the following:
- SPAN 3104W - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
  or SPAN 3104V - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
  or SPAN 3105V - Honors: Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)

**Study Abroad or Service Learning**
Students must enroll in a minimum 6-week study abroad experience, or a semester-long SPAN service learning course.

**Study Abroad**
The study abroad requirement must be fulfilled in a Spanish-speaking country or territory, involve at least one 3-credit course taught in Spanish, and include courses related to Spanish studies. Students must meet with the departmental advisor prior to departure.

**Service Learning**
The service learning requirement must be fulfilled by one of the following courses, taught during a full semester.
Take 0 or more course(s) from the following:
- SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
- SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)
- Other course with advisor consent

**Capstone**
A primary focus of the Capstone is sustained research. Students completing their Honors thesis in Spanish Studies must enroll in SPAN 3972W.
Take 3 or more credit(s) from the following:
Students who double major in CLA and choose to complete the capstone requirement in their other major may waive the Spanish Studies BA capstone, but they do need to replace the 3 credits with another Spanish elective with a Critical Analysis prerequisite. Students whose other major is outside of CLA must complete the Spanish Studies capstone.

**SPAN 3972W**
SPAN 3972W involves a semester-long research project in which the student, in consultation with the course's faculty member, selects a topic related to Spanish literature, culture, or linguistics; carries out research on that topic; and presents the results of this research in the form of a research paper (typically 20-25 pages) written in Spanish.
- SPAN 3972W - Graduation Seminar [WI] (3.0 cr)

**SPAN 5xxx**
With instructor permission, students may enroll in a SPAN 5xxx course to fulfill the capstone requirement. 5xxx-level courses generally include sustained research through extensive reading throughout the semester and writing and/or presentations based on the content of the course.
- SPAN 5xxx

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- SPAN 3015V - Honors: Spanish Composition and Communication [WI] (4.0 cr)
- SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- SPAN 3104W - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- SPAN 3104V - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)
- SPAN 3972W - Graduation Seminar [WI] (3.0 cr)
Twin Cities Campus
Spanish Studies Minor
Spanish & Portuguese Studies
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16 to 36

The Spanish Studies minor focuses on Spanish and Latin American literary, cultural, and linguistic studies. Students begin with language skills courses. These are followed by courses in Hispanic literature, culture, and linguistics. Courses with specific skills focus and service-learning components are also available. The department encourages minors to study abroad in a Spanish-speaking country or territory.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students must declare the minor at least one full term before completing its requirements and are encouraged to declare as early as possible.

At least 1 upper-division course in the minor must be taken at the University of Minnesota - Twin Cities campus. In the Spanish Studies minor, this does not include learning abroad courses taken for resident credit.

The department administers two allowable degree combinations: Spanish Studies BA and Portuguese Studies minor, or Spanish Studies minor and Portuguese Studies minor. No other departmental degree combinations are allowed.

Preparatory Courses
Students must complete the following courses or place out through EPT or LPE examinations. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.

Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:

- SPAN 1001 - Beginning Spanish (5.0 cr)
- SPAN 1002 - Beginning Spanish (5.0 cr)
- or SPAN 1022 - Alternate Second-Semester Spanish (5.0 cr)
- SPAN 1003 - Intermediate Spanish (5.0 cr)
- SPAN 1004 - Intermediate Spanish (5.0 cr)
- or SPAN 1014 - Business Spanish (5.0 cr)
- or SPAN 1044 - Intermediate Medical Spanish (5.0 cr)

Advanced Language Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

- SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)
- or SPAN 3015V - Honors: Spanish Composition and Communication [WI] (4.0 cr)

Critical Analysis Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- SPAN 3104W - Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- or SPAN 3104V - Honors: Introduction to the Study of Hispanic Literatures [LITR, WI] (3.0 cr)
- SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- or SPAN 3105V - Honors: Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)

Elective with Critical Analysis Prerequisite
Note that some of the following courses carry prerequisites. For more information, please consult the University Catalog.

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- SPAN 3211 - Interpreting Imperial Spain, 1492-1800 (3.0 cr)
- SPAN 3221 - Interpreting Colonial Latin America: Empire and Early Modernity (3.0 cr)
- SPAN 3222 - Interpreting Modern and Contemporary Latin America (3.0 cr)
• SPAN 3301 - Advanced Oral Proficiency Workshop (3.0 cr)
• SPAN 3502 - Modern Spain (3.0 cr)
• SPAN 3503 - Pre-modern Spanish Culture and Thought [HIS] (3.0 cr)
• SPAN 3510 - Issues in Hispanic Cultures (3.0 cr)
• SPAN 3512 - Modern Latin America (3.0 cr)
• SPAN 3701 - Structure of Spanish: Phonology and Phonetics (3.0 cr)
• SPAN 3702 - Structure of Spanish: Morphology and Syntax (3.0 cr)
• SPAN 3703 - Origins and History of Spanish and Portuguese (3.0 cr)
• SPAN 3704 - Sociolinguistics of the Spanish-Speaking World (3.0 cr)
• SPAN 3706 - Spanish Applied Linguistics (3.0 cr)
• SPAN 3707 - Linguistic Accuracy Through Translation (3.0 cr)
• SPAN 3730 - Topics in Hispanic Linguistics (3.0 cr)
• SPAN 3800 - Film Studies in Spanish (3.0 cr)
• SPAN 3910 - Topics in Spanish Peninsular Literature (3.0 cr)
• SPAN 3920 - Topics in Spanish-American Literature (3.0 cr)

Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

SPAN 3xxx Elective
Take 0 - 2 course(s) from the following:
• SPAN 3011W - Spanish Grammar and Composition Workshop [WI] (4.0 cr)
• SPAN 3022 - Advanced Business Spanish (4.0 cr)
• SPAN 3044 - Advanced Medical Spanish (4.0 cr)
• Other advisor approved SPAN 3xxx elective

Service Learning
Only 1 service learning course can count towards the Electives requirement.
• SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SPAN 3404 - Medical Spanish and Community Health Learning (3.0 cr)

Electives not in Spanish
Up to 1 approved course not taught in Spanish can count as an elective without a Critical Analysis prerequisite. Coursework for courses taught in English must be completed in Spanish. Taking a course in English requires advanced written consent. See the departmental advisor for more information.
• SPAN 36xx or DUS-approved course outside the department
• PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)
Twin Cities Campus
Speech-Language-Hearing Sciences B.A.
Speech-Language-Hearing Sciences
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 36 to 37
• Degree: Bachelor of Arts

The bachelor of arts (BA) program in speech-language-hearing sciences (SLHS) represents an internationally recognized comprehensive science-based degree program that offers students a broad liberal arts education in an interdisciplinary field of study. Major coursework provides a background in human communication including the physical, biological, and socio-behavioral processes that empower or disrupt the production and understanding of speech and language. These complex processes are ones that are often taken for granted, but a disorder of one of these processes caused by disease, a problem at birth, or aging can have a profound effect on a persons life. The field of speech-language-hearing sciences defines normal and disordered communication and provides the research foundation for diagnosis and treatment of communication disorders.

The SLHS curriculum blends science, language and communication, and aims to provide exceptional academic preparation and opportunities for students who are interested in physical and biological sciences and enjoy learning about linguistic, psychological, and neurophysiological theories and methods for diagnosing and treating voice, speech, language and hearing disorders. This foundational knowledge helps students reach careers such as speech-language pathologist, audiologist, psychologist, therapist, counselor, vocal coach, researcher, instructor, manager or director in related fields.

Program requirements for the SLHS major fulfill a number of the Universitys Liberal Education (LE) requirements. Major students also have multiple options to meet the LE requirement by taking courses in related fields, such as psychology, education, humanities and social sciences.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Speech-Language-Hearing Sciences BA is SLHS.

Majors are advised to select additional courses beyond those needed to satisfy the liberal education requirements in the behavioral, biological, cognitive, physical, and social sciences.

At least 18 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn a BA or a minor in speech-language-hearing sciences, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- SLHS 1301W - The Physics and Biology of Spoken Language [PHYS, WI] (4.0 cr)
  or SLHS 1301V - The Physics and Biology of Spoken Language Honors [PHYS, WI] (4.0 cr)
- SLHS 1402 - The Talking Brain [SOCS] (3.0 cr)

Communication Differences and Disorders
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- SLHS 1401 - Communication Differences and Disorders [SOCS] (3.0 cr)
- SLHS 3401 - Communication Differences and Disorders [SOCS] (3.0 cr)

Upper-Division Required Courses
Take exactly 9 course(s) totaling exactly 27 credit(s) from the following:
- SLHS 3302 - Anatomy and Physiology of the Speech and Hearing Mechanisms (3.0 cr)
- SLHS 3303 - Language Acquisition and Science (3.0 cr)
- SLHS 3304 - Phonetics (3.0 cr)
- SLHS 3305W - Speech Science [WI] (3.0 cr)
- SLHS 3306 - Hearing Science (3.0 cr)
- SLHS 4301 - Introduction to the Neuroscience of Human Communication (3.0 cr)
- SLHS 4402 - Assessment and Treatment in Speech-Language Pathology (3.0 cr)
- SLHS 4801 - Hearing Measurement and Disorders (3.0 cr)
- SLHS 4802 - Rehabilitative Audiology (3.0 cr)

Capstone
The capstone has significant writing components: a) the structured writing of a research project on a topic within or across disciplines related to speech, language, and hearing sciences and disorders; and b) the completion of a service learning experience with significant community involvement and reflective writing.
Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Speech-Language-Hearing Sciences BA capstone, and they do not need to replace the 3 credits. This means that students who take their capstone in another major can complete the Speech-Language-Hearing Sciences BA with 33 credits.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- SLHS 3402W - Capstone Project in Speech-Language-Hearing Sciences [WI] (3.0 cr)
- SLHS 3402V - Capstone Project in Speech-Language-Hearing Sciences Honors [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements:
Take 0 - 1 course(s) from the following:
- SLHS 3305W - Speech Science [WI] (3.0 cr)
- SLHS 3402W - Capstone Project in Speech-Language-Hearing Sciences [WI] (3.0 cr)
  or SLHS 3402V - Capstone Project in Speech-Language-Hearing Sciences Honors [WI] (3.0 cr)
Twin Cities Campus
Speech-Language-Hearing Sciences Minor
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 14

The minor's curriculum examines the physical, biological, and behavioral foundations of human communication. Courses focus on the study of variation in speech, language, and hearing processes, and apply that knowledge to identifying, preventing, and managing disordered speech, language, and hearing.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in speech-language-hearing sciences, but not both.

Electives
Students may need instructor permission to take 5xxx courses.
Take 14 or more credit(s) from the following:
• SLHS 3302 - Anatomy and Physiology of the Speech and Hearing Mechanisms (3.0 cr)
• SLHS 3303 - Language Acquisition and Science (3.0 cr)
• SLHS 3304 - Phonetics (3.0 cr)
• SLHS 3305W - Speech Science [WI] (3.0 cr)
• SLHS 3306 - Hearing Science (3.0 cr)
• SLHS 3401 - Communication Differences and Disorders [SOCS] (3.0 cr)
• SLHS 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• SLHS 4301 - Introduction to the Neuroscience of Human Communication (3.0 cr)
• SLHS 4402 - Assessment and Treatment in Speech-Language Pathology (3.0 cr)
• SLHS 4801 - Hearing Measurement and Disorders (3.0 cr)
• SLHS 4802 - Rehabilitative Audiology (3.0 cr)
• SLHS 5401 - Counseling and Professional Issues (3.0 cr)
• SLHS 5502 - Voice and Cleft Palate (3.0 cr)
• SLHS 5503 - Fluency and Motor Speech Disorders (3.0 cr)
• SLHS 5504 - Evaluation and Management of Dysphagia (3.0 cr)
• SLHS 5602 - Speech Sound Disorders: Assessment and Treatment across Languages (3.0 cr)
• SLHS 5603 - Assessment and Intervention of Language Disorders in Children (3.0 cr)
• SLHS 5605 - Language and Cognitive Disorders in Adults (3.0 cr)
• SLHS 5606 - Introduction to Augmentative and Alternative Communication (3.0 cr)
• SLHS 5608 - Clinical Issues in Bilingualism and Cultural Diversity (3.0 cr)
• SLHS 5609 - Child Language Disorders in Diverse Populations (3.0 cr)
• SLHS 5801 - Advanced Audiologic Assessment (3.0 cr)
• SLHS 5802 - Hearing Aids I (3.0 cr)
• SLHS 5803 - Pediatric Audiology (3.0 cr)
• SLHS 5804 - Cochlear Implants (3.0 cr)
• SLHS 5805 - Advanced Rehabilitative Audiology (3.0 cr)
• SLHS 5806 - Auditory Processing Disorders (3.0 cr)
• SLHS 5807 - Noise and Hearing Conservation (3.0 cr)
• SLHS 5808 - Pathophysiology of Hearing Disorders (3.0 cr)
• SLHS 5810 - Laboratory Module in Audiology (1.0 - 2.0 cr)
• SLHS 5820 - Clinical Research and Practice: Grand Rounds (1.0 - 6.0 cr)
• SLHS 5830 - Clinical Foundations in Audiology (1.0 - 8.0 cr)
• SLHS 5900 - Topic in Speech-Language-Hearing Sciences (2.0 cr)

Directed Research or Study
Take at most 3 credit(s) from the following:
• SLHS 3994 - Directed Research (1.0 - 12.0 cr)
• SLHS 5993 - Directed Study (1.0 - 12.0 cr)
Twin Cities Campus

Statistical Practice B.A.
Statistics, School of
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 53 to 54
• Degree: Bachelor of Arts

Statistics is the science of learning from data, measuring, controlling, and communicating uncertainty. It provides the navigation essential for controlling the course of scientific and societal advances.

The statistical practice BA is intended for students who want to use their education as certification for work requiring statistical skills or as a basis for further education in another area like medicine, psychology, law or others. Compared to the BS degree, this program reduces the number of required mathematics courses and increases the number of applied statistics courses, or courses in a supporting quantitative area. Students who complete this program using statistics electives will have applied statistics training equivalent to most masters programs in statistics.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Statistical Practice BA is STAT.

At least 17 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn no more than one degree from the statistics program: a BA or a BS or a minor.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Calculus
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• MATH 1271 - Calculus I [MATH] (4.0 cr)
  or
• MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or
• MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
• MATH 1272 - Calculus II (4.0 cr)  
or MATH 1372 - CSE Calculus II (4.0 cr)  
or MATH 1572H - Honors Calculus II (4.0 cr)

Programming for Statisticians  
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:  
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)  
or CSCI 2021 - Machine Architecture and Organization (4.0 cr)

Core Courses  
Take exactly 6 course(s) totaling exactly 24 credit(s) from the following:  
• STAT 3032 - Regression and Correlated Data (4.0 cr)  
• STAT 3701 - Introduction to Statistical Computing (4.0 cr)  
• STAT 4051 - Applied Statistics I (4.0 cr)  
• STAT 4052 - Introduction to Statistical Learning (4.0 cr)  
• STAT 4101 - Theory of Statistics I (4.0 cr)  
or Option 1  
STAT 4102 - Theory of Statistics II (4.0 cr)  
• STAT 5101 - Theory of Statistics I (4.0 cr)  
or Option 2  
STAT 5102 - Theory of Statistics II (4.0 cr)  
• STAT 5101 - Theory of Statistics I (4.0 cr)  
or Option 3  
STAT 5102 - Theory of Statistics II (4.0 cr)  
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

Electives  
Students planning to pursue a minor in mathematics, or an advanced degree in statistics or biostatistics should consult the undergraduate advisor for suggested coursework.  
Take 11 or more credit(s) from the following:  

STAT Electives  
Take 5 or more credit(s) from the following:  
• STAT 3896 - Internship for Academic Credit (1.0 - 4.0 cr)  
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)  
• STAT 5303 - Designing Experiments (4.0 cr)  
• STAT 5401 - Applied Multivariate Methods (3.0 cr)  
• STAT 5421 - Analysis of Categorical Data (3.0 cr)  
• STAT 5511 - Time Series Analysis (3.0 cr)  
• STAT 5601 - Nonparametric Methods (3.0 cr)  
• STAT 5931 - Topics in Statistics (3.0 cr)

Other Electives  
Take at most 6 credit(s) from the following:  
• CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)  
• CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)  
• CSCI 2021 - Machine Architecture and Organization (4.0 cr)  
• CSCI 2041 - Advanced Programming Principles (4.0 cr)  
• CSCI 3081W - Program Design and Development [WI] (4.0 cr)  
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)  
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)  
• CSCI 4061 - Introduction to Operating Systems (4.0 cr)  
• CSCI 4131 - Internet Programming (3.0 cr)  
• CSCI 4151 - Introduction to Computer Networks (3.0 cr)  
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)  
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)  
• CSCI 4707 - Practice of Database Systems (3.0 cr)  
• CSCI 4950 - Senior Software Project (3.0 cr)  
• CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)  
• CSCI 5103 - Operating Systems (3.0 cr)  
• CSCI 5161 - Introduction to Compilers (3.0 cr)  
• CSCI 5117 - Developing the Interactive Web (3.0 cr)  
• CSCI 5125 - Collaborative and Social Computing (3.0 cr)  
• CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)  
• CSCI 5161 - Introduction to Compilers (3.0 cr)
- CSCI 5211 - Data Communications and Computer Networks (3.0 cr)
- CSCI 5221 - Foundations of Advanced Networking (3.0 cr)
- CSCI 5231 - Wireless and Sensor Networks (3.0 cr)
- CSCI 5271 - Introduction to Computer Security (3.0 cr)
- CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
- CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
- CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
- CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
- CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
- CSCI 5471 - Modern Cryptography (3.0 cr)
- CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
- CSCI 5511 - Artificial Intelligence I (3.0 cr)
- CSCI 5512 - Artificial Intelligence II (3.0 cr)
- CSCI 5521 - Introduction to Machine Learning (3.0 cr)
- CSCI 5523 - Introduction to Data Mining (3.0 cr)
- CSCI 5525 - Machine Learning (3.0 cr)
- CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)
- CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
- CSCI 5561 - Computer Vision (3.0 cr)
- CSCI 5607 - Fundamentals of Computer Graphics 1 (3.0 cr)
- CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
- CSCI 5609 - Visualization (3.0 cr)
- CSCI 5611 - Animation & Planning in Games (3.0 cr)
- CSCI 5707 - Principles of Database Systems (3.0 cr)
- CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
- CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr)
- CSCI 5801 - Software Engineering I (3.0 cr)
- CSCI 5802 - Software Engineering II (3.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
- ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
- ECON 4401 - International Economics [GP] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4513 - Labor Economics (3.0 cr)
- ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
- ECON 4721 - Money and Banking (3.0 cr)
- ECON 4731 - Macroeconomic Policy (3.0 cr)
- ECON 4751 - Financial Economics (3.0 cr)
- ECON 4758 - Advanced Financial Economics (4.0 cr)
- ECON 4831 - Cost-Benefit Analysis (3.0 cr)
- MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 4067W - Actuarial Mathematics in Practice [WI] (3.0 cr)
- MATH 4151 - Elementary Set Theory (3.0 cr)
- MATH 4152 - Elementary Mathematical Logic (3.0 cr)
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 4603 - Advanced Calculus I (4.0 cr)
- MATH 4604 - Advanced Calculus II (4.0 cr)
- MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
- MATH 5068 - Actuarial Mathematics II (4.0 cr)
- MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
- MATH 5076 - Mathematics of Options, Futures, and Derivative Securities II (4.0 cr)
- MATH 5165 - Mathematical Logic I (4.0 cr)
- MATH 5428 - Cryptology and Number Theory (4.0 cr)
- MATH 5521 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5829H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 586H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5335 - Geometry I (4.0 cr)
- MATH 5345H - Honors: Introduction to Topology (4.0 cr)
- MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5585 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5586 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5625 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5626 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• PUBH 3415 - Introduction to Clinical Trials - Online (3.0 cr)
• PUBH 6420 - Introduction to SAS Programming (1.0 cr)
• PUBH 6431 - Topics in Hierarchical Bayesian Analysis (1.0 cr)
• PUBH 6432 - Biostatistical Methods in Translational and Clinical Research (1.0 cr)
• PUBH 6470 - SAS Procedures and Data Analysis (3.0 cr)
• PUBH 7415 - Introduction to Clinical Trials (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• CSCI 4203 - Computer Architecture (4.0 cr)
• or EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)
• or EE 5364 - Advanced Computer Architecture (3.0 cr)

Capstone: Consultation and Communication for Statisticians
The capstone is a course that focuses on how to interact and collaborate as a statistician on a multidisciplinary team. Students will learn about all aspects of statistical consulting by performing an actual consultation. This includes understanding the needs of the researcher or client, designing a study to investigate the client's needs, and communicating study results in a manner that a non-statistician can understand.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Statistical Science B.S.
Statistics, School of
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 64 to 69
- Degree: Bachelor of Science

Statistics is the science of learning from data, measuring, controlling, and communicating uncertainty. It provides the navigation essential for controlling the course of scientific and societal advances.

The statistical science BS degree is designed to help prepare students for graduate programs in statistics or careers as statisticians. It shares a core sequence of applied statistics courses with the statistical practice BA program, but requires more mathematics. This program allows students the flexibility to take additional advanced mathematics courses that are expected for admission to many graduate programs.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 1 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students may earn no more than one degree from the statistics program: a BA or a BS or a minor.

At least 17 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Calculus
Take exactly 3 course(s) totaling exactly 12 credit(s) from the following:
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
  or MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
  or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
  or MATH 2573H - Honors Calculus III (4.0 cr)

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Information current as of September 02, 2020
Linear Algebra
Choose one of the following options. Students planning to minor in mathematics should take Option 2.
Take 1 - 2 course(s) totaling 4 - 8 credit(s) from the following:

Option 1
• CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)

Option 2
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
  MATH 4242 - Applied Linear Algebra (4.0 cr)

Option 3
• MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
  MATH 4242 - Applied Linear Algebra (4.0 cr)

Programming for Statisticians
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 2021 - Machine Architecture and Organization (4.0 cr)

Core Courses
Take exactly 6 course(s) totaling exactly 24 credit(s) from the following:
• STAT 3032 - Regression and Correlated Data (4.0 cr)
• STAT 3701 - Introduction to Statistical Computing (4.0 cr)
• STAT 4051 - Applied Statistics I (4.0 cr)
• STAT 4052 - Introduction to Statistical Learning (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
  or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• STAT 5102 - Theory of Statistics II (4.0 cr)

Electives
Students planning to pursue a minor in mathematics, or an advanced degree in statistics or biostatistics should consult the undergraduate advisor for suggested coursework.
Take 14 or more credit(s) from the following:

STAT Electives
Take 4 or more credit(s) from the following:
• STAT 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5511 - Time Series Analysis (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• STAT 5931 - Topics in Statistics (3.0 cr)

• Other Electives
Take at most 10 credit(s) from the following:
• CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
• CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
• CSCI 2021 - Machine Architecture and Organization (4.0 cr)
• CSCI 2041 - Advanced Programming Principles (4.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• CSCI 3081W - Program Design and Development [WI] (4.0 cr)
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4061 - Introduction to Operating Systems (4.0 cr)
• CSCI 4131 - Internet Programming (3.0 cr)
• CSCI 4211 - Introduction to Computer Networks (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• CSCI 4950 - Senior Software Project (3.0 cr)
• CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
• CSCI 5103 - Operating Systems (3.0 cr)
• CSCI 5105 - Introduction to Distributed Systems (3.0 cr)
• CSCI 5106 - Programming Languages (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5117 - Developing the Interactive Web (3.0 cr)
• CSCI 5125 - Collaborative and Social Computing (3.0 cr)
• MATH 5345H - Honors: Introduction to Topology (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5553 - Complex Analysis (4.0 cr)
• MATH 5557 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5558 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• PUBH 3415 - Introduction to Clinical Trials - Online (3.0 cr)
• PUBH 6420 - Introduction to SAS Programming (1.0 cr)
• PUBH 6431 - Topics in Hierarchical Bayesian Analysis (1.0 cr)
• PUBH 6432 - Biostatistical Methods in Translational and Clinical Research (1.0 cr)
• PUBH 6470 - SAS Procedures and Data Analysis (3.0 cr)
• PUBH 7415 - Introduction to Clinical Trials (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• CSCI 4203 - Computer Architecture (4.0 cr)
  or EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)
  or EE 5364 - Advanced Computer Architecture (3.0 cr)

Capstone: Consultation and Communication for Statisticians
The capstone is a course that focuses on how to interact and collaborate as a statistician on a multidisciplinary team. Students will learn about all aspects of statistical consulting by performing an actual consultation. This includes understanding the needs of the researcher or client, designing a study to investigate the client's needs, and communicating study results in a manner that a non-statistician can understand.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major are still required to take the Statistics BS capstone.
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus

Statistics Minor
Statistics, School of
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 14

Statistics is the science of learning from data; measuring, controlling, and communicating uncertainty. It provides the navigation essential for controlling the course of scientific and societal advances.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn no more than one undergraduate degree in statistics: a BA or a BS or a minor.

Students should take a total of 14 credits, at least 6 of which must be from the Advanced Courses course group.

Introduction to Statistics
Take 0 - 2 course(s) from the following:
• STAT 19xx - Freshman Seminar (3.0 cr)
• Only 1 of the following courses can count towards the minor.
  • STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

Intermediate Courses
Take 0 - 4 course(s) from the following:
• STAT 3701 - Introduction to Statistical Computing (4.0 cr)
• STAT 3501 (Inactive) (1.0 cr)
• STAT 3022, 3032, 5302
  Only 1 course in the following course pairs can count towards the minor: (STAT 3022 or STAT 3032), (STAT 3032 or STAT 5302). A student may take both STAT 3022 and STAT 5302.
• STAT 3032 - Regression and Correlated Data (4.0 cr)
  or Take 0 - 2 course(s) from the following:
  • STAT 3022 - Data Analysis (4.0 cr)
  • STAT 5302 - Applied Regression Analysis (4.0 cr)

Advanced Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• STAT 4051 - Applied Statistics I (4.0 cr)
• STAT 4052 - Introduction to Statistical Learning (4.0 cr)
• STAT 5031 (Inactive) (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5511 - Time Series Analysis (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• STAT 5931 - Topics in Statistics (3.0 cr)
• STAT 5993 - Tutorial (1.0 - 6.0 cr)

• Theory of Statistics
At most one of the following course groupings may be included: (STAT 4101 and 4102) or (STAT 5101 and 5102) or (MATH 5651 and STAT 5102).
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Introduction to Statistical Learning (4.0 cr)

or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

STAT 5102 - Introduction to Statistical Learning (4.0 cr)
Twin Cities Campus
Strategic Communication: Advertising and Public Relations B.A.
School of Journalism & Mass Communication
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 37
- Degree: Bachelor of Arts

This Strategic Communication: Advertising and Public Relations major prepares students for careers in advertising, public relations, and corporate, non-profit, political, and health communication fields. Students develop the tools that are essential to public relations and advertising careers and learn to craft messages and campaigns about products, brands, companies, organizations, services, and information across multiple media platforms. Professional strategic communication provides students with skills in writing, media design, strategic messaging, and teamwork that are transferable to a wide range of careers. The major is based on a liberal arts foundation, knowledge of the social context in which the profession is practiced, and the skills and experiences needed to succeed in the marketplace.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 already admitted to the degree-granting college
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students must apply to the major. To apply, students must have completed, or be enrolled in, JOUR 1001 and at least 30 graded (A-F) credits, including at least one semester of study (13 credits) at the University of Minnesota Twin Cities campus. Students must write a statement of intent for the major application. The statement of intent provides a writing sample for the Admissions Committee, addressing information about academic interests, professional goals, and mass communication or related experience, if any.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Preparatory Course
Take exactly 1 course(s) from the following:
- JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
  or JOUR 1001H - Media in a Changing World [SOCS, TS] (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Strategic Communication BA is JOUR.

The 120-credit requirement must include at least 72 non-JOUR credits. Total program credits may not exceed 48.

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Information current as of September 02, 2020
At least 24 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may combine the Strategic Communication: Advertising and Public Relations BA with the Digital Media Studies minor, but not with the Mass Communication minor.

Students may earn no more than one undergraduate major in Journalism, Strategic Communication: Advertising and Public Relations, and Mass Communication.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Core Course**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 3004 - Information for Mass Communication (3.0 cr)
  - or JOUR 3004H - Information for Mass Communication (3.0 cr)

**Principles of Strategic Communication**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 3201 - Principles of Strategic Communication (3.0 cr)

**Strategic Communication Campaigns**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 4263 - Strategic Communication Campaigns (3.0 cr)

**Professional Courses**
Students must take at least one 4xxx-5xx course. Professional courses must be chosen in consultation with major advisor. Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:

**Execution Skills**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- JOUR 3241W - Advertising Strategy and Creative Development [WI] (3.0 cr)
- JOUR 3279W - Professional Writing for Strategic Communication [WI] (3.0 cr)

Take 3 or more credit(s) from the following:
- JOUR 3102 - Multimedia Production and Storytelling (3.0 cr)
- JOUR 3241W - Advertising Strategy and Creative Development [WI] (3.0 cr)
- JOUR 3279W - Professional Writing for Strategic Communication [WI] (3.0 cr)
- JOUR 3321 - Media Design (3.0 cr)
- JOUR 3790 - Special Topics in Strategic Communication Skills - Execution (3.0 cr)
- JOUR 4242 - Advertising Portfolio Development (3.0 cr)
- JOUR 4243 - Digital Content Development and Production for Brand Communications (3.0 cr)
- JOUR 4790 - Special Topics in Strategic Communication Skills - Execution (3.0 cr)
- JOUR 5174 - Magazine Editing and Production (3.0 cr)

**Planning Skills**
Take 6 or more credit(s) from the following:
- JOUR 3251 - Evaluative Research in Strategic Communication (3.0 cr)
- JOUR 3253 - Account Planning (3.0 cr)
- JOUR 3261 - Media Planning (3.0 cr)
- JOUR 3275 - Digital Strategy in Strategic Communication (3.0 cr)
- JOUR 3890 - Special Topics in Strategic Communication Skills - Planning (3.0 cr)
- JOUR 4259 - Strategic Communication Case Analysis (3.0 cr)
- JOUR 4262 - Management for Strategic Communication (3.0 cr)
- JOUR 4890 - Special Topics in Strategic Communication Skills - Planning (3.0 cr)

**Context Courses**
Context Courses must be chosen in consultation with major advisor.
Take exactly 9 credit(s) from the following:

**3xxx**
Take no more than 2 course(s) from the following:
- JOUR 3005 - Mass Media Effects [SOCS] (3.0 cr)
- JOUR 3006 - Visual Communication (3.0 cr)
- JOUR 3007 - The Media in American History and Law: Case Studies [HIS] (3.0 cr)
- JOUR 3551 - The Business of Digital Media: Innovation, Disruption, and Adaptation [TS] (3.0 cr)
- JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
- JOUR 3590 - Special Topics in Mass Communication: Context (3.0 cr)
- JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
- JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
• JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
• JOUR 3771 - Media Ethics [CIV] (3.0 cr)
• JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
• JOUR 3776 - Mass Communication Law (3.0 cr)
  or JOUR 3776H - Mass Communication Law (3.0 cr)
• JOUR 3796 - Media and Politics (3.0 cr)
  or POL 3796 - Media and Politics (3.0 cr)

• 4xxx-5xxx
Take 1 or more course(s) from the following:
• JOUR 4251 - Psychology of Advertising (3.0 cr)
• JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 4590 - Special Topics in Mass Communication: Context (3.0 cr)
• JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
  or JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• JOUR 4733V - Honors Thesis Seminar [WI] (3.0 cr)
• JOUR 4801 - Global Communication (3.0 cr)
• JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)
• JOUR 5541 - Mass Communication and Public Health (3.0 cr)
• JOUR 5542 - Theory-based Health Message Design (3.0 cr)
• JOUR 5552 - Law of Internet Communication (3.0 cr)
• JOUR 5601W - History of Journalism [WI] (3.0 cr)
• JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• JOUR 5725 - Management of Media Organizations (3.0 cr)
• JOUR 5777 - Contemporary Problems in Freedom of Speech and Press (3.0 cr)

Capstone
The capstone requirement is fulfilled by taking JOUR 4995 after 90 credits have been earned. Students who double major within CLA can choose to complete the capstone requirement in their other major and only have to complete 36 credits within the major.
JOUR 4995 - Capstone (1.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements:
Take 0 - 1 course(s) from the following:
• JOUR 3241W - Advertising Strategy and Creative Development [WI] (3.0 cr)
• JOUR 3279W - Professional Writing for Strategic Communication [WI] (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 5601W - History of Journalism [WI] (3.0 cr)
• JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus

Studies in Cinema and Media Culture B.A.
Cultural Studies & Comparative Literature
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 33 to 40
- Degree: Bachelor of Arts

Studies in cinema and media culture (SCMC) examines cinema by emphasizing its location within the intricate social, historical, and cultural matrix of audiovisual forms and practices. Core courses and electives are offered not only in the Department of Cultural Studies and Comparative Literature (CSCL), but also in a number of other contributing departments. Through the program's interdisciplinary framework, students explore the sounds and images of cinema as they have changed throughout the 19th and 20th centuries. Print, photography, radio, television, video, and digital media are also considered crucial to understanding the medium. Students develop the ability to "read" the production and circulation of meaning in cinema, especially within the institutions of mass culture; examine the history of cinema cultures; engage the cross-cultural and global dynamics of cinema production and reception; and explore the theoretical models that have shaped thinking about the cinema and its relations to other media.

Although the major includes a production component, its principal focus is on cultural contexts, history, and theory.

For the latest information on the SCMC major, visit the CSCL website.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper-division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the Studies in Cinema and Media Culture BA is SCMC.

At least 15 upper-division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

A given course may only count towards one major requirement.

Students may earn a BA or a minor in studies in cinema and media culture, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Foundation Courses
Take 2 or more course(s) totaling 8 or more credit(s) from the following:

Introductory Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)
- SCMC 1201W - Cinema [AH, WI] (4.0 cr)
  or SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
or CSCL 1201W - Cinema [AH, WI] (4.0 cr)
or CSCL 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
- SCMC 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
or CSCL 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)
- Formal Analysis Course
  Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
  - SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
or ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)

Core Courses
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:

Understanding Context: Cinema and Media Representations, Mediations, and Industries
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
or AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- COMM 3211 - Introduction to Media Studies (3.0 cr)
or COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
or JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
or JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
or AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
or SCMC 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
or SCMC 3221 - On Television [CIV] (3.0 cr)
or CSCL 3221 - On Television [CIV] (3.0 cr)

Making Cinema and Media: Production and Training Courses
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- ARTS 3230 - Sound Art (4.0 cr)
or ARTS 3240 - Making Art Interactive (4.0 cr)
or ARTS 3710 - Black and White Darkroom Photography (4.0 cr)
or COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
or COMM 3204 - Advanced Electronic Media Production (4.0 cr)
or COMM 4204 - Producing for Television: Theory and Practice (4.0 cr)
or ENGW 4205 - Screenwriting (3.0 cr)
or SCMC 3201 - Fundamentals of Digital Filmmaking (4.0 cr)
or SCMC 3202 - Intermediate Digital Filmmaking (4.0 cr)
or TH 4555 - Audio Technology (3.0 cr)
or ARTS 3740 - Lighting and the Constructed Image (4.0 cr)
or ARTS 5750 - Advanced Narrative Digital Filmmaking (4.0 cr)
or ARTS 3750 - Narrative Digital Filmmaking (4.0 cr)
or ARTS 5750 - Advanced Narrative Digital Filmmaking (4.0 cr)
or ARTS 3760 - Experimental Film and Video (4.0 cr)
or ARTS 5760 - Experimental Film and Video (4.0 cr)
or ARTS 3770 - Animation (4.0 cr)
or ARTS 5770 - Animation (4.0 cr)
or ARTS 3780 - Super 8 and 16 MM Filmmaking (4.0 cr)
or ARTS 5780 - Advanced Super 8 and 16 MM Filmmaking (4.0 cr)

Mapping Cinema and Media: National, Transnational, Indigenous, and Minority Cinemas and Media
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
or AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
or AMES 3456 - Japanese Film [GP] (3.0 cr)
or AMES 3556 - Korean Film and Media [AH, GP] (3.0 cr)
or AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
or CSCL 5411 - Avant-Garde Cinema (4.0 cr)
or FREN 3451 - North African Cinema (3.0 cr)
or GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
or AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
• ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)
• SCMC 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
• CSCL 3211 - Global and Transnational Cinemas [GP] (4.0 cr)

• Analyzing Cinema and Media: Courses in Theory, Method, and Critique
  Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
  • COMM 4245 - Critical Television Studies (3.0 cr)
  • COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
  • GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
  • SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
  • SCMC 5002 - Advanced Film Analysis (4.0 cr)
  • SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
  • SCMC 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
  • SCMC 3221 - On Television [CIV] (3.0 cr)

• Electives
  Take 3 or more course(s) totaling 9 or more credit(s) from the following:
  • Lower-division Courses
    Take 0 - 1 course(s) totaling 0 - 4 credit(s) from the following:
    • AMES 1001 - Asian Film and Animation [AH, GP] (3.0 cr)
    • ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)
    • ARTS 1704 - Introduction to Moving Images [AH] (4.0 cr)
    • GER 1601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
    • SCMC 1201W - Cinema [AH, WI] (4.0 cr)
    • SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
    • SCMC 1201W - Cinema [AH, WI] (4.0 cr)
    • SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)
    • JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
    • JOUR 1001H - Media in a Changing World [SOCS, TS] (3.0 cr)
  • Upper-division Courses
    Take 2 or more course(s) totaling 6 or more credit(s) from the following:
    • Studies in Cinema and Media Culture Electives
      Take 0 or more course(s) from the following:
      • SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
      • SCMC 3201 - Fundamentals of Digital Filmmaking (4.0 cr)
      • SCMC 3202 - Intermediate Digital Filmmaking (4.0 cr)
      • SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
      • SCMC 5002 - Advanced Film Analysis (4.0 cr)
      • SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
      • SCMC 3211 - Global and Transnational Cinemas [GP] (4.0 cr)
      • SCMC 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
      • SCMC 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
      • SCMC 3221 - On Television [CIV] (3.0 cr)
      • SCMC 3221 - On Television [CIV] (3.0 cr)
  • Other Electives
    Take 0 or more course(s) from the following:
    • AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
    • AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
    • AMES 3456 - Japanese Film [GP] (3.0 cr)
    • AMES 3556 - Korean Film and Media [AH, GP] (3.0 cr)
    • AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
    • AMST 252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
    • AMST 253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
    • ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
    • ARTS 3240 - Making Art Interactive (4.0 cr)
    • ARTS 3730 - Intermediate Digital Photography (4.0 cr)
    • ARTS 5610 - New Media: Making Art Interactive (4.0 cr)
    • COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
    • COMM 3204 - Advanced Electronic Media Production (4.0 cr)
    • COMM 3211 - Introduction to Media Studies (3.0 cr)
• COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• COMM 4245 - Critical Television Studies (3.0 cr)
• COMM 4263 - Feminist Media Studies [DSJ] (3.0 cr)
• COMM 5261 - Political Economy of Media Culture (3.0 cr)
• CSCL 5411 - Avant-Garde Cinema (4.0 cr)
• ENGW 4205 - Screenwriting (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
• JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• PORT 3800 - Film Studies in Portuguese (3.0 cr)
• SPAN 3800 - Film Studies in Spanish (3.0 cr)
• AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)
• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• ARTS 3750 - Narrative Digital Filmmaking (4.0 cr)
or ARTS 5750 - Advanced Narrative Digital Filmmaking (4.0 cr)
• ARTS 3760 - Experimental Film and Video (4.0 cr)
or ARTS 5760 - Experimental Film and Video (4.0 cr)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
• JOUR 3796 - Media and Politics (3.0 cr)
or POL 3796 - Media and Politics (3.0 cr)

• Directed Studies, Internships, and Topics
Take 0 - 3 course(s) from the following:

Directed Studies/Internship
Take 0 - 2 course(s) from the following:
• SCMC 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• SCMC 3993 - Directed Study (1.0 - 3.0 cr)
• SCMC 4993 - Directed Study (1.0 - 3.0 cr)
• SCMC 5993 - Directed Study (1.0 - 3.0 cr)
• CSCL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
• CSCL 3993 - Directed Study (1.0 - 3.0 cr)
• CSCL 4993 - Directed Study (1.0 - 3.0 cr)
• CSCL 5993 - Directed Study (1.0 - 3.0 cr)

Topics
Take 0 - 2 course(s) from the following:
• SCMC 3910 - Topics in Studies in Cinema and Media Culture (3.0 cr)
• AMES 3250 - Topics in Asian Film and Media (3.0 cr)
• AMES 5250 - Advanced Topics in Asian Film and Media (3.0 cr)
• ENGL 3040 - Studies in Film (3.0 cr)
• FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
• GER 5630 - Topics in German Cinema (3.0 cr)
• PORT 3800 - Film Studies in Portuguese (3.0 cr)
• SPAN 3800 - Film Studies in Spanish (3.0 cr)
• Other topics courses approved by the Film Studies Coordinator, based on the specific topic

Capstone
The Capstone represents the culmination of a student's work and development within SCMC and will allow them to pursue individualized interests through an advanced curriculum. When choosing a capstone option students should consult with the SCMC academic advisor or the film studies coordinator to determine the most productive path for their individual goals and interests. Both SCMC 5001 & 5002 focus on advanced theoretical and analytical models that emphasize a close reading of media and cinema.

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

Students who double major and choose to complete the capstone requirement in their other major are still required to take the Studies in Cinema and Media Culture BA capstone.
SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
or SCMC 5002 - Advanced Film Analysis (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• AMES 3356W - Chinese Film [AH, WI] (3.0 cr)
• AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
• AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
• AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
**Twin Cities Campus**  
**Studies in Cinema and Media Culture Minor**  
*Cultural Studies & Comparative Literature*  
**College of Liberal Arts**

- Program Type: Undergraduate minor related to major  
- Requirements for this program are current for Fall 2020  
- Required credits in this minor: 18

Studies in cinema and media culture (SCMC) examines cinema by emphasizing its location within the intricate social, historical, and cultural matrix of audiovisual forms and practices. Through our program's interdisciplinary framework, students explore the sounds and images of cinema as they have changed throughout the 19th and 20th centuries. Print, photography, radio, television, video, and digital media are also considered crucial to understanding the medium. Students develop the ability to "read" the production and circulation of meaning in cinema, especially within the institutions of mass culture; examine the history of cinema cultures; engage the cross-cultural and global dynamics of cinema production and reception; and explore the theoretical models that have shaped thinking about the cinema and its relations to other media. Core courses and electives are offered not only in the Department of Cultural Studies and Comparative Literature (CSCL), but also in a number of other contributing departments, including Asian languages and literatures; gender, women, and sexuality studies; art; and journalism. Although the major includes a production component, its principal focus is on cultural contexts, history, and theory.

**Program Delivery**  
This program is available:  
- via classroom (the majority of instruction is face-to-face)

**Minor Requirements**  
Students may earn a BA or a minor in studies in cinema and media culture, but not both.

**Foundation Course**  
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:  
- ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)  
- SCMC 1201W - Cinema [AH, WI] (4.0 cr)  
  - or SCMC 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)  
  - or CSCL 1201W - Cinema [AH, WI] (4.0 cr)  
  - or CSCL 1201V - Honors Course: Cinema [AH, WI] (4.0 cr)  
- SCMC 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)  
  - or CSCL 1202W - Media: Word, Image, Sound [AH, TS, WI] (4.0 cr)

**Electives**  
Take 14 or more credit(s) from the following:  
- **Studies in Cinema and Media Culture Electives**  
  Take 0 or more course(s) from the following:  
  - SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)  
  - SCMC 3201 - Fundamentals of Digital Filmmaking (4.0 cr)  
  - SCMC 3202 - Intermediate Digital Filmmaking (4.0 cr)  
  - SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)  
  - SCGMC 5002 - Advanced Film Analysis (4.0 cr)  
  - SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)  
  - or CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)  
  - SCMC 3211 - Global and Transnational Cinemas [GP] (4.0 cr)  
  - or CSCL 3211 - Global and Transnational Cinemas [GP] (4.0 cr)  
  - SCMC 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)  
  - or CSCL 3212W - Documentary Cinema: History and Politics [AH, CIV, WI] (4.0 cr)  
  - SCMC 3221 - On Television [CIV] (3.0 cr)  
  - or CSCL 3221 - On Television [CIV] (3.0 cr)

- **Other Electives**  
  Take 0 or more course(s) from the following:  
  - AFRO 3654 - African Cinema [AH, GP] (3.0 cr)  
  - AMES 3356W - Chinese Film [AH, WI] (3.0 cr)  
  - AMES 3456 - Japanese Film [GP] (3.0 cr)
• AMES 3556 - Korean Film and Media [AH, GP] (3.0 cr)
• AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
• AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (3.0 cr)
• AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• ARTS 3240 - Making Art Interactive (4.0 cr)
• ARTS 3730 - Intermediate Digital Photography (4.0 cr)
• ARTS 5610 - New Media: Making Art Interactive (4.0 cr)
• COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
• COMM 3204 - Advanced Electronic Media Production (4.0 cr)
• COMM 3211 - Introduction to Media Studies (3.0 cr)
• COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
• COMM 3263W - Media Literacy: Decoding Media Images and Messages [WI] (3.0 cr)
• COMM 4245 - Critical Television Studies (3.0 cr)
• COMM 4263 - Feminist Media Studies [DSJ] (3.0 cr)
• COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
• COMM 5261 - Political Economy of Media Culture (3.0 cr)
• CSCL 5411 - Avant-Garde Cinema (4.0 cr)
• ENGW 4205 - Screenwriting (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
• JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
• JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• PORT 3800 - Film Studies in Portuguese (3.0 cr)
• SPAN 3800 - Film Studies in Spanish (3.0 cr)
• AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 5655 - African-American Cinema [AH, DSJ] (3.0 cr)
• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• ARTS 3750 - Narrative Digital Filmmaking (4.0 cr)
or ARTS 5750 - Advanced Narrative Digital Filmmaking (4.0 cr)
• ARTS 3760 - Experimental Film and Video (4.0 cr)
or ARTS 5760 - Experimental Film and Video (4.0 cr)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
or GEOG 5374 - The City in Film (4.0 cr)
• JOUR 3796 - Media and Politics (3.0 cr)
or POL 3796 - Media and Politics (3.0 cr)
• Directed Studies, Internships, and Topics
  Take 0 - 2 course(s) from the following:
  Directed Studies/Internship
  Take 0 - 1 course(s) from the following:
  • SCMC 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
  • SCMC 3993 - Directed Study (1.0 - 3.0 cr)
  • SCMC 4993 - Directed Study (1.0 - 3.0 cr)
  • SCMC 5993 - Directed Study (1.0 - 3.0 cr)
  • CSCL 3896 - Internship for Academic Credit (1.0 - 4.0 cr)
  • CSCL 3993 - Directed Study (1.0 - 3.0 cr)
  • CSCL 4993 - Directed Study (1.0 - 3.0 cr)
  • CSCL 5993 - Directed Study (1.0 - 3.0 cr)
• Topics
  Take 0 - 1 course(s) from the following:
  • SCMC 3910 - Topics in Studies in Cinema and Media Culture (3.0 cr)
  • AMES 3250 - Topics in Asian Film and Media (3.0 cr)
  • AMES 5250 - Advanced Topics in Asian Film and Media (3.0 cr)
  • ENGL 3040 - Studies in Film (3.0 cr)
  • FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
  • GER 5630 - Topics in German Cinema (3.0 cr)
  • PORT 3800 - Film Studies in Portuguese (3.0 cr)
• **SPAN 3800** - Film Studies in Spanish (3.0 cr)
• Other topics courses approved by the Film Studies Coordinator, based on the specific topic
**Twin Cities Campus**

**Swedish Minor**

**German, Nordic, Slavic & Dutch**

**College of Liberal Arts**

- **Program Type:** Undergraduate minor related to major
- **Requirements for this program are current for Fall 2020**
- **Required credits in this minor:** 16 to 36

The Swedish language, which has nearly 10 million speakers, helps you communicate with people in Sweden and inhabitants from throughout the Scandinavian countries of Norway and Denmark, Swedish-speaking Finland, and the Baltic islands. Students with Swedish language skills are able to learn more about the many Swedish accomplishments in arts and media, electronics, the medical device industry, and internet communications and services.

The Swedish minor can benefit students seeking careers in renewable energy, design, international business, telecommunications, and medical technology. Learning Swedish allows you to understand and communicate in Norwegian and Danish as well.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](https://www.admissions.umn.edu).

**Required prerequisites**

**Beginning and Intermediate Swedish**

These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.

Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:

- **SWED 1001 - Beginning Swedish (5.0 cr)**
- **SWED 1002 - Beginning Swedish (5.0 cr)**
- **SWED 1003 - Intermediate Swedish (5.0 cr)**
- **SWED 1004 - Intermediate Swedish (5.0 cr)**

**Minor Requirements**

Students are required to take 4 semester(s) of Swedish.

At least 3 upper-division credits in the minor must be taken at the University of Minnesota Twin Cities campus. In the Swedish minor, this does not include learning abroad courses taken for resident credit.

Students with a German, Scandinavian, Dutch major may elect a minor in Swedish, but no courses may count for both the major and the minor.

**Readings in Scandinavian Languages**

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

- **SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)**

**Electives**

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

- **SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)**
- **SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)**
- **SCAN 3503 - Scandinavian Folklore [LITR, GP] (3.0 cr)**
- **SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)**
- **SCAN 3505 - Scandinavian Fiction From 1890 to Present [LITR] (3.0 cr)**
- **SCAN 3601 - Great Literary Works of Scandinavia [LITR] (3.0 cr)**
- **SCAN 3602 - The Literary Fairy Tale in Scandinavia [LITR] (3.0 cr)**
- **SCAN 3604W - Living Pictures: An Introduction to Nordic Cinema [AH, WI] (3.0 cr)**
- **SCAN 3613 - Children's Literature in Scandinavia [LITR] (3.0 cr)**
- **SCAN 3670 - Topics in Scandinavian Studies (3.0 cr)**

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Information current as of September 02, 2020
• SCAN 5502 - The Icelandic Saga (3.0 cr)
• SCAN 5670 - Topics in Scandinavian Studies (3.0 cr)
• SCAN 5701 - Old Norse Language and Literature (3.0 cr)
• SCAN 5703 - Old Norse Poetry (3.0 cr)
• SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
  or SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
• SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
  or SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
  or SCAN 5617 - Scandinavian Gothic: Horror and the Uncanny in Nordic Literature and Media [AH, GP] (3.0 cr)
• SCAN 5634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
  or SCAN 5634 - Scandinavian Women Writers [GP, LITR] (3.0 cr)

• Directed Study
  Take 0 - 1 course(s) from the following:
  • SCAN 3993 - Directed Studies (1.0 - 4.0 cr)
  • SCAN 5993 - Directed Studies (1.0 - 4.0 cr)
Twin Cities Campus
Technical Communication Certificate
Writing Studies Department
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 8
- Degree: Technical Communication Certificate

The certificate in technical communication provides students with proficiency in four areas of technical communication: written, oral, visual, and digital. Students take at least two required upper division courses and complete a capstone project as part of one of the courses. The courses are designed to teach students practical skills for communicating complex technical information to a variety of audiences and to complement their career plans.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 8 credits in the certificate must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BS, a minor, or a certificate in technical writing and communication, but none of these may be combined.

Required Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Elective
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- WRIT 3441 - Editing, Critique, and Style (3.0 cr)
- WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
- WRIT 3671 - Visual Rhetoric and Document Design (3.0 cr)
- WRIT 3672W - Project Design and Development [WI] (3.0 cr)
- WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)
- WRIT 4501 - Usability and Human Factors in Technical Communication (3.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- WRIT 4662W - Writing With Digital Technologies [WI] (3.0 cr)

Capstone Project
Students take the capstone project concurrently with the WRIT elective that they take for the certificate program. The project must be developed in consultation with the instructor of the selected elective course, who will also evaluate the project. All work must be completed within the same semester. If necessary, an outside reader with subject matter expertise will be invited to also provide input. The capstone project extends an assignment in the selected course to (1) to further develop and reflect on what students have learned through their certificate coursework and (2) to provide them with a tangible product that can be used for job applications. Project formats include a paper, report, podcast, video, scientific poster, or electronic presentation. Students can consult the department advisor for details.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- WRIT 3291 - Technical Communication Certificate Capstone Project (1.0 cr)
Twin Cities Campus

Technical Writing and Communication B.S.
Writing Studies Department
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 50
• Degree: Bachelor of Science

The Department of Writing Studies offers a bachelor of science in technical writing and communication (TWC). This degree offers a unique combination of written, digital, oral and visual communication theory and practice as it relates to interdisciplinary areas of science and technology. Core WRIT courses address writing and editing, rhetorical theory, visual rhetoric and document design, usability, and technical communication practices. Students combine core WRIT courses with one of four sub-plan areas in technology or science: information technology and design, biological and health sciences, legal discourse and public policy, and environmental science. For major advising, contact the Assistant Director of the Technical Writing and Communication Program in the Department of Writing Studies in 202 Nolte Center.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Equivalent transfer courses are accepted in all course groups except Core Courses.

Other courses may be allowed to count towards the sub-plan requirements; see department advisor for final consent.

At least 22 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a BS, a minor, or a certificate in technical writing and communication, but none of these may be combined.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Core Courses
Take exactly 7 course(s) totaling exactly 22 credit(s) from the following:
- WRIT 3001 - Introduction to Technical Writing and Communication (3.0 cr)
- WRIT 3221W - Communication Modes and Methods [WI] (3.0 cr)
- WRIT 3441 - Editing, Critique, and Style (3.0 cr)
- WRIT 3671 - Visual Rhetoric and Document Design (3.0 cr)
- WRIT 3701W - Rhetorical Theory for Writing Studies [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)
- WRIT 4501 - Usability and Human Factors in Technical Communication (3.0 cr)
  or WRIT 4662W - Writing With Digital Technologies [WI] (3.0 cr)

Electives
Note: Any 3xxx or 4xxx-level WRIT course can be taken in conjunction with WRIT 4995 to fulfill the senior project.
Take 12 or more credit(s) from the following:
- Oral, Written, Visual, and Digital Communication
Elective credit can only be received for WRIT 4662W if the course has not already fulfilled the core course requirement.

Take 6 or more credit(s) from the following:
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3101W - Writing Arguments [WI] (3.0 cr)
- WRIT 3102W - Public Writing [CIV, WI] (3.0 cr)
- WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- WRIT 3672W - Project Design and Development [WI] (3.0 cr)
- WRIT 3751W - Seminar: Theory and Practice of Writing Consultancy [WI] (3.0 cr)
- WRIT 3896 - Internship in Technical Writing and Communication (3.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- WRIT 4662W - Writing With Digital Technologies [WI] (3.0 cr)

**Science, Technology, and Society**

Elective credit can only be received for WRIT 4501 if the course has not already fulfilled the core course requirement.

Take 6 or more credit(s) from the following:
- WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
- WRIT 3361 - Inactive [LITR, CIV] (3.0 cr)
- WRIT 3371W - Technology, Self, and Society [TS, WI] (3.0 cr)
- WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
- WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
- WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
- WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)
- WRIT 4501 - Usability and Human Factors in Technical Communication (3.0 cr)
- WRIT 4562 - International Professional Communication (3.0 cr)
- WRIT 4664W - Science, Medical, and Health Writing [WI] (3.0 cr)

**Capstone**

Take WRIT 4995 (1 cr.) in conjunction with a 3xxx- or 4xxx-level WRIT course. The following WRIT courses are recommended: WRIT 3102W, WRIT 3221W, WRIT 3244W, WRIT 3361, WRIT 3381W, WRIT 3441, WRIT 3577W, WRIT 3671, WRIT 3701W, WRIT 4431, WRIT 4501, WRIT 4562, WRIT 4662W, and WRIT 4664W. Instructor consent is required prior to registration.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- Students who double major and choose to complete the capstone requirement in their other major may waive the Technical Writing and Communication BS capstone, and they do not need to replace the 1 credit.
  - WRIT 4995 - Technical Writing and Communication Capstone (1.0 cr)
  - or WRIT 4995H - Technical Writing and Communication Honors Thesis (1.0 cr)

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3101W - Writing Arguments [WI] (3.0 cr)
- WRIT 3102W - Public Writing [CIV, WI] (3.0 cr)
- WRIT 3221W - Communication Modes and Methods [WI] (3.0 cr)
- WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
- WRIT 3371W - Technology, Self, and Society [TS, WI] (3.0 cr)
- WRIT 3381W - Writing and Modern Cultural Movements [AH, DSJ, WI] (3.0 cr)
- WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
- WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
- WRIT 3672W - Project Design and Development [WI] (3.0 cr)
- WRIT 3751W - Seminar: Theory and Practice of Writing Consultancy [WI] (3.0 cr)
- WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- WRIT 4662W - Writing With Digital Technologies [WI] (3.0 cr)
- WRIT 4664W - Science, Medical, and Health Writing [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  - or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)
Program Sub-plans

Students are required to complete one of the following sub-plans.

Information Technology and Design

Students completing this sub-plan are encouraged to take WRIT 3577W as one of their required electives for the major. WRIT 3577W does not count toward the required 15 credits in the sub-plan.

**Required Courses**

Take 15 or more credit(s) from the following:

**Lower Division**

Take at most 9 credit(s) from the following:

- CSCI 1001 - Overview of Computer Science [MATH, TS] (4.0 cr)
- CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
- CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
- DES 2101 - Design and Visual Presentation (2.0 cr)
- GDES 2342 - Web Design (3.0 cr)
- GDES 2361 - Design Process: Photography (3.0 cr)
- DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
  or DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
  or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)

**Upper Division**

Take 6 or more credit(s) from the following:

- COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
- COMM 3204 - Advanced Electronic Media Production (4.0 cr)
- COMM 3211 - Introduction to Media Studies (3.0 cr)
- COMM 3645W - How Pictures Persuade [WI] (3.0 cr)
- COMM 4291 - New Telecommunication Media (3.0 cr)
- CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
- DES 3131 - User Experience in Design (4.0 cr)
- DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
- DES 3311 - Travels in Typography (3.0 cr)
- GDES 4131W - History of Graphic Design [WI] (4.0 cr)
- IDSC 3101 - Introduction to Programming (2.0 cr)
- IDSC 3102 - Intermediate Programming (2.0 cr)
- JOUR 3006 - Visual Communication (3.0 cr)
- JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
- JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
- JOUR 3811W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
- DES 3131 - User Experience in Design (4.0 cr)
- DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
- DES 3311 - Travels in Typography (3.0 cr)
- GDES 4131W - History of Graphic Design [WI] (4.0 cr)
- IDSC 3101 - Introduction to Programming (2.0 cr)
- IDSC 3102 - Intermediate Programming (2.0 cr)
- JOUR 3006 - Visual Communication (3.0 cr)
- JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
- JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
- JOUR 3811W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
- DES 3131 - User Experience in Design (4.0 cr)
- DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
- DES 3311 - Travels in Typography (3.0 cr)

**Biological and Health Sciences**

Students are strongly encouraged to take BIOL 1009 and ANAT 3001 within this sub-plan to facilitate a stronger knowledge base for other required courses.

**Required Courses**

Take 15 or more credit(s) from the following:

**Lower Division**

Take at most 9 credit(s) from the following:

- BIOL 1101 - Genetics and Society [CIV] (3.0 cr)
- BIOL 1012 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
- NSCI 1001 - Fundamental Neuroscience: Understanding Ourselves [TS] (3.0 cr)
- NSCI 2101 - Human Neuroanatomy [BIOL] (4.0 cr)
• PHAR 1002 - Medical Terminology (2.0 cr)
• PHAR 1004 - Common Prescription Drugs and Diseases (2.0 cr)
• PHIL 1005 - Scientific Reasoning (4.0 cr)
  or PHIL 1005H (Inactive) (4.0 cr)
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
  or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)
• CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
  with CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
• CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  with CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  with CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  with CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
  or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
  or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

**Upper Division**
Take 6 or more credit(s) from the following:
• ANAT 3001 - Human Anatomy (3.0 cr)
• BIOG 3021 - Biochemistry (3.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3505 - Mind and Brain (3.0 cr)
• PHAR 3206 - Foundations of Health Literacy (3.0 cr)
• PHAR 3601 (Inactive) (3.0 cr)
• PHAR 4204W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
• PHAR 5201 - Applied Medical Terminology (2.0 cr)
• PHCL 3100 - Pharmacology for Pre-Med and Life Science Students (2.0 cr)
• PHIL 3601W - Introduction to Political Philosophy [AH, CIV, WI] (4.0 cr)
• POL 1001 - American Democracy in a Changing World [SOCS] (3.0 cr)
  or POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (3.0 cr)

Legal Discourse and Public Policy
Students completing this sub-plan are encouraged to take WRIT 3577W and WRIT 4431 as two of their required electives for the major. WRIT 3577W and WRIT 4431 do not count toward the required 15 credits in the sub-plan.

**Required Courses**
Take 15 or more credit(s) from the following:

**Lower Division**
Take at most 9 credit(s) from the following:
• PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
• PHIL 1004W - Introduction to Political Philosophy [AH, CIV, WI] (4.0 cr)
• POL 1201 - Political Ideas [HIS, CIV] (3.0 cr)
• POL 1001 - American Democracy in a Changing World [SOCS] (3.0 cr)
  or POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (3.0 cr)

**Upper Division**
Take 6 or more credit(s) from the following:
• COMM 3631 - Freedom of Speech [CIV] (3.0 cr)
• CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
• GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
• HIST 3835 - Law in American Life: 1865 to Present (3.0 cr)
• JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
• JOUR 5552 - Law of Internet Communication (3.0 cr)
• LAW 3000 - Introduction to American Law and Legal Reasoning (3.0 cr)
• PHIL 4321W [inactive][WI] (3.0 cr)
• POL 3225 - American Political Thought [CIV] (3.0 cr)
• POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
• POL 3309 - Justice in America (3.0 cr)
• POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
• POL 4485 [inactive][CIV] (3.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 4502W - The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)
• SOC 4161 - Criminal Law in American Society (3.0 cr)
• SOC 4162 - Criminal Procedure in American Society (3.0 cr)
• SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
   or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
   or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
• JOUR 3776 - Mass Communication Law (3.0 cr)
   or JOUR 3776H - Mass Communication Law (3.0 cr)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
   or SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4171 - Sociology of International Law: Human Rights & Trafficking [GP] (3.0 cr)
   or GLOS 4406 [inactive][GP] (3.0 cr)

Environmental Science

Required Courses
Take 15 or more credit(s) from the following:

Lower Division
Take at least 9 credit(s) from the following:
• ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
• ESCI 2202 - Earth History (4.0 cr)
• ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
• BIOL 1052 - Environmental Biology: Science and Solutions [ENV] (3.0 cr)
   or BIOL 1055 - Environmental Biology: Science and Solutions with Laboratory [BIOL, ENV] (4.0 cr)
• GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• GEOG 1403H - Honors: Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
   or GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)

• Upper Division
Take 6 or more credit(s) from the following:
• BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
• CEGE 3541 - Environmental Engineering Laboratory (3.0 cr)
• COMM 4250 - Environmental Communication [ENV] (3.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• ESCI 3005 - Earth Resources (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
• ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
• ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
• FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
• LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
• PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
• SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
   or ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
   or ESCI 5102 - Climate Change and Human History (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
   or GLOS 3330 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
  or ESCI 5402 - Science and Politics of Global Warming (3.0 cr)
• HSG 3482 [Inactive] [TS] (3.0 cr)
  or ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
• GLOS 4305 [Inactive] [ENV] (3.0 cr)
  or SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
  or HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)
Twin Cities Campus
Technical Writing and Communication Minor
Writing Studies Department
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 16

The minor provides theoretical and practical information about how to communicate complex technical information to various audiences. Students take required courses in written communication, visual communication and in communication technologies. Additional courses (e.g., oral communication, project management, international communication) are selected to complement students' career plans. For help in planning the minor, contact the Assistant Director of the Technical Writing and Communication Program in the Department of Writing Studies in 202 Nolte Center.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BS, a minor, or a certificate in technical writing and communication, but none of these may be combined.

Core Courses
Take exactly 3 course(s) totaling exactly 10 credit(s) from the following:
- WRIT 3441 - Editing, Critique, and Style (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
  or WRIT 3671 - Visual Rhetoric and Document Design (3.0 cr)

Electives
WRIT 3993 and 3896 cannot count as electives.
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- WRIT 3xxx
- WRIT 4xxx
Twin Cities Campus
Theatre Arts B.A.
Theatre Arts & Dance Dept
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 31 to 41
- Degree: Bachelor of Arts

This degree program offers study of the art form in both theoretical historical context and the practice of live dramatic performance. Course offerings include theatre history and dramatic literature; acting, movement, and voice; directing; design and technology for scenery, costume, lighting, makeup, and sound; and stage and arts management.

Coursework also embraces theatre as a group art, an art in which individual excellence is often fully realized only in collaboration with other artists. The practical application of the art encourages students to test classroom experiences under the pressure of public performance in the laboratory of the University Theatre.

For students interested in a BFA program, see Acting BFA for requirements.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

All CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the theatre arts BA is TH.

The theatre arts BA consists of base requirements, common across all sub-plans, and a choice between specialization in one of five sub-plans: generalist, social justice/applied drama, history/literature, design/technology, or performance creation. Each sub-plan carries a separate set of requirements to be completed in addition to the base requirements.

Students may earn no more than one undergraduate degree from the theatre arts program: a BA in theatre arts, a BFA in acting, or a minor in theatre arts.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Introductory Courses
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
- TH 1321 - Fundamentals of Acting & Performance (3.0 cr)
- TH 1322 - Creating the Performance (3.0 cr)
- TH 1501 - Introduction to Design and Technology for Live Performance (3.0 cr)
- TH 1101W - Introduction to the Theatre [AH, WI] (3.0 cr)
  or TH 1101V - Honors Section: Introduction to the Theater [AH, WI] (3.0 cr)

History of the Theatre
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
  • TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
  • TH 3172 - History of the Theatre: Age of Enlightenment to Present (3.0 cr)

Stage Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
  • TH 3571 - Introduction to Stage Technology (3.0 cr)

Theatre Practicum
At least one credit of TH 3100 must be a production (not performance) credit.
Take 2 or more course(s) totaling 2 or more credit(s) from the following:
  • TH 3100 - Theatre Practicum (1.0 cr)

Capstone
Seniors execute and document a project of their own design over the course of a year. Projects may take the form of, but are not limited to: a research paper, an internship with an arts organization, creation of an original work, play, dance, lighting, set design, sound score, etc., advanced technical position on a production, grant writing, portfolio development and presentation, educational curriculum development, film and/or software projects. A faculty advisor will serve as a resource.
Students who double major and choose to complete the capstone requirement in their other major may waive the Theater Arts BA capstone, but they do need to replace the 2 credits with a theatre arts elective.
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  • TH 4901 - Capstone Project for Theater (2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
  • TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
  • TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
  • TH 5179W - Text and Performance [WI] (3.0 cr)
  • TH 5181W - Blacks in American Theatre [WI] (3.0 cr) or AFRO 5181W [inactive] [WI] (3.0 cr)
  • TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr) or AFRO 5182W [inactive] [WI] (3.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Generalist
Take two courses totaling at least 6 credits to complete the sub-plan. The history/literature requirement is completed by the upper division writing intensive within the major requirement in the program requirements. Students must complete at least 11 credits of upper division coursework in residence at the University of Minnesota - Twin Cities campus.

Design/Technology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  • TH 3521 - Introduction to Scenic Design for Theater and Performance (3.0 cr)
  • TH 3531 - Introduction to Theatrical Costume Design (3.0 cr)
  • TH 3541 - Introduction to Stage Lighting Design (3.0 cr)
  • TH 3559 - Introduction to Sound Design for the Theatre (3.0 cr)
  • TH 3716 - Stage Management (4.0 cr)
  • TH 5355 - Puppetry: Techniques and Practice in Contemporary Theater (3.0 cr)

Performance
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  • TH 3321 - Stanislavski and Techniques for Characterization (3.0 cr)
  • TH 3330 - Physical Approaches to Acting (3.0 cr)
  • TH 3361 - Introductory Musical Theater (3.0 cr)
  • TH 3381 - Theater Storytelling and Solo Performance (3.0 cr)
  • TH 4322 - Acting for the Camera (3.0 cr)
  • TH 5117 - Performance and Social Change (3.0 cr)

Social Justice/Applied Drama
Take 5 courses totaling at least 15 credits to complete the subplan. Students must complete at least 14 credits of upper division
coursework in residence at the University of Minnesota - Twin Cities campus.

**Electives**
Select topics of TH 3950 & 5950 may count toward this requirement with prior approval from the director of undergraduate studies. Take 5 or more course(s) totaling 15 or more credit(s) from the following:

- DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
- HECU 3581 - Art for Social Change: Art and Culture in Political, Social, and Historical Context [AH] (4.0 cr)
- HECU 3582 - Art for Social Change: Arts Praxis - Social Justice Theory and Practice in the Field [DSJ] (4.0 cr)
- HECU 3583 - Art for Social Change: Intersections of Art, Identity and Advocacy Internship & Integration Seminar [CIV] (8.0 cr)
- TH 3120 - Theatre: Theory and Practice (3.0 cr)
- TH 5117 - Performance and Social Change (3.0 cr)
- TH 5183 - Critical Literacy, Storytelling, and Creative Drama (3.0 cr)
- TH 5355 - Puppetry: Techniques and Practice in Contemporary Theater (3.0 cr)
- YOST 4314 - Theater Activities in Youthwork and Education (2.0 cr)
  or YOST 5314 - Theatre Activities in Youthwork and Education (2.0 cr)

**History/Literature**
Take five courses totaling at least 15 credits to complete the sub-plan. Students must complete at least 14 credits of upper division coursework in residence at the University of Minnesota - Twin Cities campus.

**Electives**
Select topics of TH 3950 & 5950 may count toward this requirement with prior approval from the director of undergraduate studies. Take 5 or more course(s) totaling 15 or more credit(s) from the following:

- TH 3120 - Theatre: Theory and Practice (3.0 cr)
- TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
- TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
- TH 5179W - Text and Performance [WI] (3.0 cr)
- TH 5183 - Critical Literacy, Storytelling, and Creative Drama (3.0 cr)
- TH 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or TH 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or GLOS 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or GLOS 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
- TH 3311 - Asian American Theater (3.0 cr)
  or AAS 3311 - Asian American Theater (3.0 cr)
- TH 5181W - Blacks in American Theatre [WI] (3.0 cr)
  or AFRO 5181W [Inactive] [WI] (3.0 cr)
- TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or AFRO 5182W [Inactive] [WI] (3.0 cr)

**Design/Technology**
Take six courses totaling at least 16 credits to complete the sub-plan, including the Theatre Practicum. Students must complete at least 15 credits of upper division coursework in residence at the University of Minnesota - Twin Cities campus.

**Theatre Practicum**
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:

- TH 3100 - Theatre Practicum (1.0 cr)

**Electives**
Select topics of TH 3950 & 5950 may count toward this requirement with prior approval from the director of undergraduate studies. Take 5 or more course(s) totaling 15 or more credit(s) from the following:

- TH 3521 - Introduction to Scenic Design for Theater and Performance (3.0 cr)
- TH 3531 - Introduction to Theatrical Costume Design (3.0 cr)
- TH 3541 - Introduction to Stage Lighting Design (3.0 cr)
- TH 3559 - Introduction to Sound Design for the Theatre (3.0 cr)
- TH 3716 - Stage Management (4.0 cr)
- TH 4380 - Creative Collaboration (1.0 - 3.0 cr)
- TH 4532 - Makeup for the Actor (2.0 cr)
- TH 4555 - Audio Technology (3.0 cr)
- TH 4556 [Inactive] (3.0 cr)
- TH 5100 - Theatre Practicum (1.0 - 4.0 cr)
- TH 5355 - Puppetry: Techniques and Practice in Contemporary Theater (3.0 cr)
- TH 5500 - Theatre Design Practicum (1.0 - 3.0 cr)
- TH 5510 - Drawing, Rendering, and Painting for the Theatre Designer I (3.0 cr)
- TH 5520 - Scene Design (3.0 cr)
- TH 5530 - Costume Design (3.0 cr)
• TH 5540 - Lighting Design for the Theatre (3.0 cr)
• TH 5545 - Stage Lighting Technology (3.0 cr)
• TH 5554 - Multimedia Production for Live Performance (3.0 cr)
• TH 5556 - Audio Engineering (3.0 cr)
• TH 5559 - Sound Design for Performance (3.0 cr)
• TH 5560 - Drawing, Rendering, and Painting for the Theatre Designer II (3.0 cr)
• TH 5570 - Properties/Scenery Technology (1.0 - 3.0 cr)
• TH 5580 - Costume Technology (3.0 cr)
• TH 5590 - Theatre Technology Practicum (1.0 - 3.0 cr)
• TH 5716 - Stage Management for the Theatre (4.0 cr)
• TH 5760 - Advanced Stage Management (2.0 cr)

Performance Creation
Take nine courses totaling at least 15 credits including BA mentoring and creative collaboration to complete the sub-plan. Students must complete at least 14 credits of upper division coursework in residence at the University of Minnesota - Twin Cities campus.

BA Mentoring
Take exactly 4 course(s) totaling exactly 4 credit(s) from the following:
• TH 3370 - BA Masterclass (1.0 cr)

Creative Collaboration
Take exactly 2 course(s) totaling 2 or more credit(s) from the following:
• TH 4380 - Creative Collaboration (1.0 - 3.0 cr)

Electives
Select topics of TH 3950 & 5950 may count toward this requirement with prior approval from the director of undergraduate studies.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• TH 3115 - Introduction to Playwriting (3.0 cr)
• TH 3314 - Text and the Actor (3.0 cr)
• TH 3316 - Voice for the Actor (3.0 cr)
• TH 3321 - Stanislavski and Techniques for Characterization (3.0 cr)
• TH 3322 - Advanced Techniques for Characterization (3.0 cr)
• TH 3330 - Physical Approaches to Acting (3.0 cr)
• TH 3332 - Circus Performance (1.0 cr)
• TH 3361 - Introductory Musical Theater (3.0 cr)
• TH 3381 - Theater Storytelling and Solo Performance (3.0 cr)
• TH 3711 - Beginning Directing (3.0 cr)
• TH 4115 - Intermediate Playwriting (3.0 cr)
• TH 4321 - Career Preparation for the Actor (3.0 cr)
• TH 4322 - Acting for the Camera (3.0 cr)
• TH 4532 - Makeup for the Actor (2.0 cr)
• TH 4711 - Intermediate Stage Direction (3.0 cr)
• TH 5117 - Performance and Social Change (3.0 cr)
• TH 5330 - Comedy: Advanced Physical Performance Studio (3.0 cr)
• TH 5340 - Tragedy/Poetry: Advanced Physical Performance Studio (3.0 cr)
• TH 5355 - Puppetry: Techniques and Practice in Contemporary Theater (3.0 cr)
• TH 5370 - Hand, Mind, and Gesture: An Independent Study in the Creation of Image Driven Performance (3.0 cr)
• TH 5711 - Advanced Stage Direction (3.0 cr)
• TH 5365 - Intermediate Musical Theatre (3.0 cr)
• TH 3311 - Asian American Theater (3.0 cr)
or AAS 3311 - Asian American Theater (3.0 cr)
Twin Cities Campus

Theatre Arts Minor
Theatre Arts & Dance Dept
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 24

The minor offers study of the art form in both theoretical historical context and the practice of live dramatic performance. Course offerings include theatre history and dramatic literature; acting, movement, and voice; directing; design and technology for scenery, costume, lighting, makeup, and sound; and stage and arts management.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn a BA or a minor in theatre arts, but not both.

Introductory Courses
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
- TH 1101W - Introduction to the Theatre [AH, WI] (3.0 cr)
  or TH 1101V - Honors Section: Introduction to the Theater [AH, WI] (3.0 cr)
- TH 1321 - Fundamentals of Acting & Performance (3.0 cr)
- TH 1322 - Creating the Performance (3.0 cr)
- TH 1501 - Introduction to Design and Technology for Live Performance (3.0 cr)

History/Literature
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
- TH 3172 - History of the Theatre: Age of Enlightenment to Present (3.0 cr)
- TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
- TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
- TH 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or TH 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or GLOS 3152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
  or GLOS 5152W - Global Avant-Gardes: Theatre, Music, Modernity [HIS, WI] (3.0 cr)
- TH 3311 - Asian American Theater (3.0 cr)
  or AAS 3311 - Asian American Theater (3.0 cr)

Design/Technology
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- TH 3521 - Introduction to Scenic Design for Theater and Performance (3.0 cr)
- TH 3531 - Introduction to Theatrical Costume Design (3.0 cr)
- TH 3541 - Introduction to Stage Lighting Design (3.0 cr)
- TH 3571 - Introduction to Stage Technology (3.0 cr)
Twin Cities Campus
Urban Studies B.A.
Geography, Environment, Society
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 36 to 44
• Degree: Bachelor of Arts

The University established the urban studies program in 1969. In the 1960s, studying cities and urban life and form was considered avant-garde in all disciplines. Urban studies is an explicitly cross-disciplinary major rooted in College of Liberal Arts but accepting courses from a diversity of undergraduate colleges. The program offers students a mix of academic, hands-on, experiential, and skill-based coursework focused on a common theme of urban social/cultural issues, urban political economy and planning, urban infrastructure and environment, or international urban issues. Through required urban studies coursework students are exposed to local practitioners who teach courses based around their areas of expertise such as: homeless youth, public-private partnerships, transit development, or housing in an international perspective. These local practitioners expose students to the diverse careers that can come from a degree on urban studies. Students are encouraged to study abroad.

Students who major in urban studies come to understand the way cities work and use the vast resources of the Twin Cities to explore their interests. All students complete one required 140 hour internship as part of their exploration of careers they might pursue. Finding an internship is great practice for a job hunt. With the vast local network of alumnus of the program, there are many internship possibilities each term.

The program offers one-on-one advising and students come to know one another through shared classes and through the student group: Minnesota Urban Studies Student Association.

Post graduation some students go on to graduate school in fields as diverse as social work, law, finance, geography, and medicine. Other students elect to spend their post-graduate year in a service based organization such as Teach for America, Peace Corps, Reading Corps, Americorps etc. The majority go on to get some on-the-job experience.

Urban studies gives students a breadth of knowledge and the knowledge of how to be engaged in urban issues often leading to long-term careers in public service.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 18 upper division (3xxx-level or higher) credits outside the major designator. These credits must be taken in designators different from the major designator and cannot include courses that are cross-listed with the major designator. The major designator for the urban studies BA is URBS.

At least 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn up to one undergraduate degree in the urban studies program: a BA, a BS, or a minor. Students who major or minor in urban studies may combine those degrees with a major or minor in geography, or the other departmental minors: public health,
geographic information science.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Introductory Course**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
  or URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)

**Skills and Methods Courses**
Some 5xxx-level courses will require departmental consent.
Take 2 or more course(s) totaling 6 - 8 credit(s) from the following:

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**Introductory Courses in Statistics & Research**
Take 0 - 1 course(s) from the following:
- GEOG 3511 - Principles of Cartography (4.0 cr)
- PA 5031 - Statistics for Public Affairs (4.0 cr)
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- SOC 3801 - Sociological Research Methods (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  or EPSY 5261 - Introductory Statistical Methods (3.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
- PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
  or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

**Intermediate Courses in Statistics & Quantitative Analysis**
Take 0 or more course(s) from the following:
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
- GEOG 5511 - Principles of Cartography (4.0 cr)
- GEOG 5562 - GIS Development Practicum (3.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)
- STAT 4101 - Theory of Statistics I (4.0 cr)
- STAT 5021 - Statistical Analysis (4.0 cr)
- STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
- STAT 5401 - Applied Multivariate Methods (3.0 cr)
- STAT 5421 - Analysis of Categorical Data (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)
- STAT 4102 - Theory of Statistics II (4.0 cr)
  or STAT 5102 - Theory of Statistics II (4.0 cr)

**Applied Courses in Statistics & Quantitative Research Design**
Take 0 or more course(s) from the following:
- CEGE 3101 - Computer Applications I (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GIS 5571 - ArcGIS I (3.0 cr)
- GIS 5576 - Spatial Digital Humanities (3.0 cr)
- PA 5022 - Applications of Economics for Policy Analysis (1.5 - 3.0 cr)
- PA 5271 - Geographic Information Systems: Applications in Planning and Policy Analysis (3.0 cr)
- HIST 3011 - Measuring the Past: Quantitative Methods for Historical Research [MATH] (4.0 cr)
  or HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research (4.0 cr)

**Other Methods Courses**
Take 0 or more course(s) from the following:
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- MKTG 3010 - Marketing Research (4.0 cr)
- PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
- PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- PA 5035 - Survey Research and Data Collection (1.5 cr)
- PA 5112 - Public Budgeting (3.0 cr)
- PA 5113 - State and Local Public Finance (3.0 cr)
- PA 5221 - Private Sector Development (3.0 cr)
- PA 5253 - Designing Planning and Participation Processes (3.0 cr)
• PA 5511 - Community Economic Development (3.0 cr)
• PA 5521 - Development Planning and Policy Analysis (4.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
• AMIN 3001 - Public History (3.0 cr)
or AMST 3003 - Public History (3.0 cr)
• HIST 3001 - Public History (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
or GEOG 5401 - Geography of Environmental Systems and Global Change (3.0 cr)

• Communication Courses
  Take 0 - 1 course(s) from the following:
  • COMM 3411 - Introduction to Small Group Communication (3.0 cr)
  • COMM 5411 - Small Group Communication Research (3.0 cr)
  • COMM 5441 - Communication in Human Organizations (3.0 cr)
  • SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)

Urban Form and Society Courses
  Take 2 or more course(s) totaling 6 or more credit(s) from the following:
  • DES 3331 - Street Life Urban Design Seminar (3.0 cr)
  • GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
  • GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
  • GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
  • HSG 3462 - Housing and Community Development (3.0 cr)
  • HSG 4465 - Housing in a Global Perspective (3.0 cr)
  • URBS 3871 - A Suburban World (3.0 cr)
  • ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
  • EAS 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
  • GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
or GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)

Urban Studies Colloquia
  Take 2 or more credit(s) from the following:
  • URBS 3200 - Urban Studies Colloquium (1.0 cr)

Urban Studies Workshop
  Take 6 or more credit(s) from the following:
  • URBS 3500 - Urban Studies Workshop (3.0 cr)

Urban Studies Internship Seminar
  Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
  • URBS 3896 - Urban Studies Internship Seminar (2.0 cr)

Capstone
  The Capstone Project is a culmination of the major and should reflect a students best work. It is a process of data collection, reading, reflection, collaboration, interpretation, and writing. As the culmination of undergraduate training, each project develops from an interest or specialization deriving from previous courses. Students complete an academic research paper that is at least 15 pages of text and uses a minimum of 8 academic sources. Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Urban Studies BA capstone, and they do not need to replace the 2 credits.
  • URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)

Upper Division Writing Intensive within the major
  Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
  Take 0 - 1 course(s) from the following:
  • APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
  • ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
  • COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
  • COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
  • ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
  • GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
  • GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
Urban Studies Concentrations
Students are required to complete three courses for a minimum of 9 credits from one of the four concentrations. Some 5xxx-level courses will require departmental consent.

Social and Cultural Analysis of Urban Life
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
- AFRO 5910 - Topics in African American and African Studies (3.0 cr)
- AMIN 4511 - Indigenous Political Economies (3.0 cr)
- CHIC 4275 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
- ENGL 3013 - Poems about Cities (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- GEOG 3377 - Music in the City [DSJ, AH] (3.0 cr)
- HIST 3821 - United States in the 20th Century to 1945 [HIS] (3.0 cr)
- HIST 3822 - Making America Modern: 1945 to Present (3.0 cr)
- HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
- PA 5290 - Topics in Planning (0.5 - 4.0 cr)
- PA 5401 - Poverty, Inequality, and Public Policy (3.0 cr)
- PA 5601 - Global Survey of Gender and Public Policy (3.0 cr)
- POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
- PSI 3201 - Introduction to Social Psychology (3.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- SOC 4108 - Current Issues in Crime Control (3.0 cr)
- SW 5101 - Historical Origins and Contemporary Policies in Social Welfare (3.0 cr)
- AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
  or HIST 3865 - African American History, 1865 to Present (3.0 cr)
  or AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
  or HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
  or AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  or AMST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or GLBT 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or HIST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 cr)

Urban Political Economy
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- ECON 4821 - Public Economics (3.0 cr)
- GEOG 3605 - Geographic Perspectives on Planning (3.0 cr)
- GEOG 5361 - Geography and Real Estate (4.0 cr)
- HSG 5463 - Housing Policy (3.0 cr)
• LA 3004 - Regional Environmental Landscape Planning (4.0 cr)
• PA 4200 - Urban and Regional Planning (3.0 cr)
• PA 5013 - Law and Urban Land Use (1.5 cr)
• PA 5204 - Urban Spatial and Social Dynamics (3.0 cr)
• PA 5209 - Urban Planning and Health Equity (3.0 cr)
• PA 5211 - Land Use Planning (3.0 cr)
• PA 5221 - Private Sector Development (3.0 cr)
• PA 5290 - Topics in Planning (0.5 - 4.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5511 - Community Economic Development (3.0 cr)
• POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• URBS 3861 - Financing Cities (3.0 cr)
• URBS 3871 - A Suburban World (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• LA 3514 - Making the Mississippi [CIV] (3.0 cr)
or LA 5514 - Making the Mississippi (3.0 cr)

-OR-

Urban Infrastructure and Environment
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ARCH 4671 - Historic Preservation (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
• ARCH 5672 - Historic Building Conservation (3.0 cr)
• ARCH 5673 - Historic Property Research and Documentation (3.0 cr)
• ARCH 5711 - Theory and Principles of Urban Design (3.0 cr)
• CEGE 3201 - Transportation Engineering (3.0 cr)
• CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• LA 3003 - Climate Change Adaptation (3.0 cr)
• LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
• LA 4755 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)
• LA 5204 - Metropolitan Landscape Ecology (3.0 cr)
• LA 5401 - Directed Studies in Emerging Areas of Landscape Architecture (1.0 - 3.0 cr)
• PA 4200 - Urban and Regional Planning (3.0 cr)
• PA 5013 - Law and Urban Land Use (1.5 cr)
• PA 5212 - Managing Urban Growth and Change (3.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5722 - Economics of Natural Resource and Environmental Policy (3.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• CEGE 4211 - Traffic Engineering (3.0 cr)
or CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
or PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5213 - Transit Planning and Management (3.0 cr)
or PA 5231 - Transit Planning and Management (3.0 cr)
• LA 3514 - Making the Mississippi [CIV] (3.0 cr)
or LA 5514 - Making the Mississippi (3.0 cr)

-OR-

International Urban Issues
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
• ARCH 3722 - The City in Visual Culture [GP, AH] (3.0 cr)
• ARCH 4674 - World Heritage Conservation (3.0 cr)
• ARGN 3009 - Argentina: Stereotypes and Identity (3.0 cr)
• CHIC 3352 - Transborder Theory: Global Views/Borderland Spaces (3.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
• GEOG 5385 - Globalization and Development: Political Economy (4.0 cr)
• HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
• HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
• HSG 4465 - Housing in a Global Perspective (3.0 cr)
• PA 5522 - International Development Policy, Families, and Health (3.0 cr)
• PA 5561 - Gender and International Development (3.0 cr)
• PA 5880 - Exploring Global Cities (1.0 - 3.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
• POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
• POL 3464 - The Politics of Economic Inequality (3.0 cr)
• AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
• APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
• HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• EAS 3468 - Social Change in Modern China (3.0 cr)
• HIST 3468 - Social Change in Modern China (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
• GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)
• GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
• LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)

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Information current as of September 02, 2020
Twin Cities Campus
Urban Studies B.S.
Geography, Environment, Society
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 42 to 50
• Degree: Bachelor of Science

The University established the urban studies program in 1969. In the 1960s, studying cities and urban life and form was considered avant-garde in all disciplines. Urban studies is an explicitly cross-disciplinary major rooted in College of Liberal Arts but accepting courses from a diversity of undergraduate colleges. The program offers students a mix of academic, hands-on, experiential and skill-based coursework focused on a common theme of urban social/cultural issues, urban political economy and planning, urban infrastructure and environment, or international urban issues. Through required urban studies coursework students are exposed to local practitioners who teach courses based around their areas of expertise such as: homeless youth, public-private partnerships, transit development, or housing in an international perspective. These local practitioners expose students to the diverse careers that can come from a degree on urban studies. Students are encouraged to study abroad.

Students who major in urban studies come to understand the way cities work and use the vast resources of the Twin Cities to explore their interests. All students complete one required 140 hour internship as part of their exploration of careers they might pursue. Finding an internship is great practice for a job hunt. With the vast local network of alumnus of the program, there are many internship possibilities each term.

The program offers one-on-one advising and students come to know one another through shared classes and through the student group: Minnesota Urban Studies Student Association

Post graduation some students go on to graduate school in fields as diverse as social work, law, finance, geography, and medicine. Other students elect to spend their post-graduate year in a service based organization such as Teach for America, Peace Corps, Reading Corps, Americorps etc. The majority go on to get some on-the-job experience.

Urban studies gives students a breadth of knowledge and the knowledge of how to be engaged in urban issues often leading to long-term careers in public service.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 15 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Students may earn up to one undergraduate degree in the urban studies program: a BA, a BS, or a minor. Students who major or minor in urban studies may combine those degrees with a major or minor in geography or the other departmental minors: public health, geographic information science.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Introductory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
or URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)

**Skills and Methods Courses**

Some 5xxx-level courses will require departmental consent.

Take 4 or more course(s) totaling 12 - 16 credit(s) from the following:

### Introductory Courses in Statistics & Research

Take 0 or 1 course(s) from the following:
- GEOG 3511 - Principles of Cartography (4.0 cr)
- PA 5031 - Statistics for Public Affairs (4.0 cr)
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- SOC 3801 - Sociological Research Methods (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  or EPSY 5261 - Introductory Statistical Methods (3.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
- PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
  or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

### Intermediate Courses in Statistics & Quantitative Analysis

Take 0 or more course(s) from the following:
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
- GEOG 5511 - Principles of Cartography (4.0 cr)
- GEOG 5562 - GIS Development Practicum (3.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)
- STAT 4101 - Theory of Statistics I (4.0 cr)
- STAT 5021 - Statistical Analysis (4.0 cr)
- STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
- STAT 5401 - Applied Multivariate Methods (3.0 cr)
- STAT 5421 - Analysis of Categorical Data (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)
- STAT 4102 - Theory of Statistics II (4.0 cr)
  or STAT 5102 - Theory of Statistics II (4.0 cr)

### Applied Courses in Statistics & Quantitative Research Design

Take 0 or more course(s) from the following:
- CEGE 3101 - Computer Applications I (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GIS 5571 - ArcGIS I (3.0 cr)
- GIS 5576 - Spatial Digital Humanities (3.0 cr)
- PA 5022 - Applications of Economics for Policy Analysis (1.5 - 3.0 cr)
- PA 5271 - Geographic Information Systems: Applications in Planning and Policy Analysis (3.0 cr)
- HIST 3011 - Measuring the Past: Quantitative Methods for Historical Research [MATH] (4.0 cr)
  or HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research (4.0 cr)

### Other Methods Courses

Take 0 or more course(s) from the following:
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- MKTG 3010 - Marketing Research (4.0 cr)
- PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
- PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- PA 5035 - Survey Research and Data Collection (1.5 cr)
- PA 5112 - Public Budgeting (3.0 cr)
- PA 5113 - State and Local Public Finance (3.0 cr)
- PA 5221 - Private Sector Development (3.0 cr)
- PA 5253 - Designing Planning and Participation Processes (3.0 cr)
- PA 5511 - Community Economic Development (3.0 cr)
- PA 5521 - Development Planning and Policy Analysis (4.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- AMIN 3001 - Public History (3.0 cr)
  or AMST 3003 - Public History (3.0 cr)
  or HIST 3001 - Public History (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
or GEOG 5401 - Geography of Environmental Systems and Global Change (3.0 cr)

Urban Form and Society Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• DES 3331 - Street Life Urban Design Seminar (3.0 cr)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
• HSG 3462 - Housing and Community Development (3.0 cr)
• HSG 4465 - Housing in a Global Perspective (3.0 cr)
• URBS 3871 - A Suburban World (3.0 cr)
• ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
• EAS 3479 - History of Chinese Cities and Urban Life (3.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 cr)
• GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
or GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)

Urban Studies Colloquia
Take 2 or more credit(s) from the following:
• URBS 3200 - Urban Studies Colloquium (1.0 cr)

Urban Studies Workshop
Take 6 or more credit(s) from the following:
• URBS 3500 - Urban Studies Workshop (3.0 cr)

Urban Studies Internship Seminar
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• URBS 3896 - Urban Studies Internship Seminar (2.0 cr)

Capstone
The Capstone Project is a culmination of the major and should reflect a student's best work. It is a process of data collection, reading, reflection, collaboration, interpretation, and writing. As the culmination of undergraduate training, each project develops from an interest or specialization deriving from previous courses. Students complete an academic research paper that is at least 15 pages of text and uses a minimum of 8 academic sources. Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
Students who double major and choose to complete the capstone requirement in their other major may waive the Urban Studies BA capstone, and they do not need to replace the 2 credits.
• URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
• URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
Urban Studies Concentrations

Students are required to complete three courses for a minimum of 9 credits from one of the four concentrations. Some 5xxx-level courses will require departmental consent.

Social and Cultural Analysis of Urban Life

Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
- **AFRO 5910** - Topics in African American and African Studies (3.0 cr)
- **AMIN 4511** - Indigenous Political Economies (3.0 cr)
- **CHIC 4275** - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
- **COMM 3451W** - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- **COMM 5451W** - Intercultural Communication Processes [WI] (3.0 cr)
- **ENGL 3013** - Poems about Cities (3.0 cr)
- **GEOG 3371W** - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- **GEOG 3377** - Music in the City [DSJ, AH] (3.0 cr)
- **HIST 3821** - United States in the 20th Century to 1945 [HIS] (3.0 cr)
- **HIST 3822** - Making America Modern: 1945 to Present (3.0 cr)
- **HSF 4467W** - Housing and the Social Environment [WI] (4.0 cr)
- **PA 5290** - Topics in Planning (0.5 - 4.0 cr)
- **PA 5401** - Poverty, Inequality, and Public Policy (3.0 cr)
- **PA 5601** - Global Survey of Gender and Public Policy (3.0 cr)
- **POL 3462** - Politics of Race, Class, and Ethnicity (3.0 cr)
- **PSY 3201** - Introduction to Social Psychology (3.0 cr)
- **SOC 3451W** - Cities & Social Change [WI] (3.0 cr)
- **SOC 4108** - Current Issues in Crime Control (3.0 cr)
- **SW 5101** - Historical Origins and Contemporary Policies in Social Welfare (3.0 cr)
- **AFRO 4231** - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- **AMIN 4231** - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
- **CHIC 4231** - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- **AFRO 3865** - African American History: 1865 to the Present (3.0 cr)
- **HIST 3865** - African American History, 1865 to Present (3.0 cr)
- **AFRO 3866** - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
- **HIST 3856** - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
- **AMIN 3872** - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
- **AMST 3212** - Dissident Sexualities in U.S. History (3.0 cr)
- **GLBT 3212** - Dissident Sexualities in U.S. History (3.0 cr)
- **HIST 3212** - Dissident Sexualities in U.S. History (3.0 cr)
- **GEOG 3374W** - The City in Film [AH, WI] (4.0 cr)
- **GEOG 5374** - The City in Film (4.0 cr)

Urban Political Economy

Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
- **APEC 361W** - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- **ECON 4821** - Public Economics (3.0 cr)
- **GEOG 3605** - Geographic Perspectives on Planning (3.0 cr)
- **GEOG 5361** - Geography and Real Estate (4.0 cr)
- **HSG 5463** - Housing Policy (3.0 cr)
- **LA 3004** - Regional Environmental Landscape Planning (4.0 cr)
- **PA 4200** - Urban and Regional Planning (3.0 cr)
- **PA 5013** - Law and Urban Land Use (1.5 cr)
- **PA 5204** - Urban Spatial and Social Dynamics (3.0 cr)
- **PA 5209** - Urban Planning and Health Equity (3.0 cr)
- **PA 5211** - Land Use Planning (3.0 cr)
- **PA 5221** - Private Sector Development (3.0 cr)
- **PA 5290** - Topics in Planning (0.5 - 4.0 cr)
- **PA 5421** - Racial Inequality and Public Policy (3.0 cr)
- **PA 5511** - Community Economic Development (3.0 cr)
- **POL 3462** - Politics of Race, Class, and Ethnicity (3.0 cr)
- **POL 3477** - Political Economy of Development [SOCS, GP] (3.0 cr)
Urban Infrastructure and Environment
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- ARCH 4671 - Historic Preservation (3.0 cr)
- ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
- ARCH 5672 - Historic Building Conservation (3.0 cr)
- ARCH 5673 - Historic Property Research and Documentation (3.0 cr)
- ARCH 5711 - Theory and Principles of Urban Design (3.0 cr)
- CEGE 3201 - Transportation Engineering (3.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
- ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
- ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
- ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- LA 3003 - Climate Change Adaptation (3.0 cr)
- LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
- LA 4755 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)
- LA 5204 - Metropolitan Landscape Ecology (3.0 cr)
- LA 5401 - Directed Studies in Emerging Areas of Landscape Architecture (1.0 - 3.0 cr)
- PA 4200 - Urban and Regional Planning (3.0 cr)
- PA 5013 - Law and Urban Land Use (1.5 cr)
- PA 5212 - Managing Urban Growth and Change (3.0 cr)
- PA 5421 - Racial Inequality and Public Policy (3.0 cr)
- PA 5722 - Economics of Natural Resource and Environmental Policy (3.0 cr)
- SUST 4004 - Sustainable Communities (3.0 cr)
- URBs 3751 - Fundamentals of Urban Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- URBs 3771 - Fundamentals of Transit (3.0 cr)
- ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- CEGE 4211 - Traffic Engineering (3.0 cr)
- CEGE 5211 - Traffic Engineering (3.0 cr)
- CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
- PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
- CEGE 5213 - Transit Planning and Management (3.0 cr)
- PA 5231 - Transit Planning and Management (3.0 cr)
- LA 3514 - Making the Mississippi [CIV] (3.0 cr)
- LA 5514 - Making the Mississippi (3.0 cr)

International Urban Issues
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
- ARCH 3722 - The City in Visual Culture [GP, AH] (3.0 cr)
- ARCH 4674 - World Heritage Conservation (3.0 cr)
- ARGN 3009 - Argentina: Stereotypes and Identity (3.0 cr)
- CHIC 3352 - Transborder Theory: Global Views/Borderland Spaces (3.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
- GEOG 5385 - Globalization and Development: Political Economy (4.0 cr)
- HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
- HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
- HSG 4465 - Housing in a Global Perspective (3.0 cr)
- PA 5522 - International Development Policy, Families, and Health (3.0 cr)
• PA 5561 - Gender and International Development (3.0 cr)
• PA 5880 - Exploring Global Cities (1.0 - 3.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
• POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
• POL 3464 - The Politics of Economic Inequality (3.0 cr)
• AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
  or HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
  or APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• EAS 3468 - Social Change in Modern China (3.0 cr)
  or HIST 3468 - Social Change in Modern China (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)
• GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
  or HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
  or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
Twin Cities Campus
Urban Studies Minor
CLA Dean's Office
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 13 to 14

The minor in urban studies focuses on the conceptual and analytical frameworks and specialized skills needed for professions focused on urban change or development. The scope of the discipline is reflected in the main areas of specialization that make up the undergraduate curriculum: social and cultural analysis of urban life, urban political economy, urban infrastructure and environment, and international urban issues.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Students may earn up to one undergraduate degree in the urban studies program: a BA, a BS, or a minor. Students who major or minor in urban studies may combine those degrees with a major or minor in geography, or the other departmental minors: public health, geographic information science.

Introductory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
  or URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)

Electives
Take at least 6 credits of electives chosen from one of the four tracks: Social and Cultural Analysis of Urban Life, Urban Political Economy, Urban Infrastructure and Environment, and International Urban Issues.

Social and Cultural Analysis of Urban Life
Take 0 - 6 credit(s) from the following:
• AFRO 5910 - Topics in African American and African Studies (3.0 cr)
• AMIN 4511 - Indigenous Political Economies (3.0 cr)
• CHIC 4267 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)
• ENGL 3013 - Poems about Cities (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• GEOG 3377 - Music in the City [DSJ, AH] (3.0 cr)
• HIST 3821 - United States in the 20th Century to 1945 [HIS] (3.0 cr)
• HIST 3822 - Making America Modern: 1945 to Present (3.0 cr)
• HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
• PA 5290 - Topics in Planning (0.5 - 4.0 cr)
• PA 5401 - Poverty, Inequality, and Public Policy (3.0 cr)
• PA 5601 - Global Survey of Gender and Public Policy (3.0 cr)
• POL 3482 - Politics of Race, Class, and Ethnicity (3.0 cr)
• PSY 3201 - Introduction to Social Psychology (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 4108 - Current Issues in Crime Control (3.0 cr)
• SW 5101 - Historical Origins and Contemporary Policies in Social Welfare (3.0 cr)
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
  or HIST 3865 - African American History, 1865 to Present (3.0 cr)
• AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
  or HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
• AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
  or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
• AMST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or GLBT 3212 - Dissident Sexualities in U.S. History (3.0 cr)
  or HIST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 cr)

Urban Political Economy
Take 0 - 6 credit(s) from the following:
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ECON 4821 - Public Economics (3.0 cr)
• GEOG 3605 - Geographic Perspectives on Planning (3.0 cr)
• GEOG 5361 - Geography and Real Estate (4.0 cr)
• HSG 5463 - Housing Policy (3.0 cr)
• LA 3004 - Regional Environmental Landscape Planning (4.0 cr)
• PA 4200 - Urban and Regional Planning (3.0 cr)
• PA 5013 - Law and Urban Land Use (1.5 cr)
• PA 5204 - Urban Spatial and Social Dynamics (3.0 cr)
• PA 5209 - Urban Planning and Health Equity (3.0 cr)
• PA 5211 - Land Use Planning (3.0 cr)
• PA 5221 - Private Sector Development (3.0 cr)
• PA 5290 - Topics in Planning (0.5 - 4.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5511 - Community Economic Development (3.0 cr)
• POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
• URB 3771 - Fundamentals of Transit (3.0 cr)
• URB 3861 - Financing Cities (3.0 cr)
• URB 3871 - A Suburban World (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• LA 3514 - Making the Mississippi [CIV] (3.0 cr)
  or LA 5514 - Making the Mississippi (3.0 cr)

Urban Infrastructure and Environment
Take 0 - 6 credit(s) from the following:
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ARCH 4671 - Historic Preservation (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
• ARCH 5672 - Historic Building Conservation (3.0 cr)
• ARCH 5673 - Historic Property Research and Documentation (3.0 cr)
• ARCH 5711 - Theory and Principles of Urban Design (3.0 cr)
• CEGE 3201 - Transportation Engineering (3.0 cr)
• CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
• GEOG 3339 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• LA 3003 - Climate Change Adaptation (3.0 cr)
• LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
• LA 4755 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)
• LA 5204 - Metropolitan Landscape Ecology (3.0 cr)
• LA 5401 - Directed Studies in Emerging Areas of Landscape Architecture (1.0 - 3.0 cr)
• PA 4200 - Urban and Regional Planning (3.0 cr)
• PA 5013 - Law and Urban Land Use (1.5 cr)
• PA 5212 - Managing Urban Growth and Change (3.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5722 - Economics of Natural Resource and Environmental Policy (3.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• URB 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• URB 3771 - Fundamentals of Transit (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• CEGE 4211 - Traffic Engineering (3.0 cr)
or CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
or PA 5202 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5213 - Transit Planning and Management (3.0 cr)
or PA 5231 - Transit Planning and Management (3.0 cr)
• LA 3514 - Making the Mississippi [CIV] (3.0 cr)
or LA 5514 - Making the Mississippi (3.0 cr)

• International Urban Issues
Take 0 - 6 credit(s) from the following:
  • ARCH 3722 - The City in Visual Culture [GP, AH] (3.0 cr)
  • ARCH 4674 - World Heritage Conservation (3.0 cr)
  • ARGN 3009 - Argentina: Stereotypes and Identity (3.0 cr)
  • CHIC 3352 - Transborder Theory: Global Views/Borderland Spaces (3.0 cr)
  • GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  • GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
  • GEOG 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
  • GEOG 5385 - Globalization and Development: Political Economy (4.0 cr)
  • HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
  • HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
  • HSG 4465 - Housing in a Global Perspective (3.0 cr)
  • PA 5522 - International Development Policy, Families, and Health (3.0 cr)
  • PA 5561 - Gender and International Development (3.0 cr)
  • PA 5580 - Exploring Global Cities (1.0 - 3.0 cr)
  • POL 331W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
  • POL 3462 - Politics of Race, Class, and Ethnicity (3.0 cr)
  • POL 3464 - The Politics of Economic Inequality (3.0 cr)
  • AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
or HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
  • AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
or APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
  • ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
  • EAS 3468 - Social Change in Modern China (3.0 cr)
or HIST 3468 - Social Change in Modern China (3.0 cr)
  • GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  • GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (3.0 cr)
or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (3.0 cr)
  • GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
  • HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)

Urban Studies Colloquia
Take 2 or more credit(s) from the following:
  • URBS 3200 - Urban Studies Colloquium (1.0 cr)

Urban Studies Workshop or Internship Seminar
Take exactly 1 course(s) totaling 2 - 3 credit(s) from the following:
  • URBS 3500 - Urban Studies Workshop (3.0 cr)
or URBS 3896 - Urban Studies Internship Seminar (2.0 cr)
Twin Cities Campus
World Music Minor
School of Music
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 20 to 25

The minor in world music is organized around hands-on experience with West African Drumming, Javanese Gamelan, Indian Raga, Jazz, and other musics. It combines experiential immersion with scholarly study (historical, ethnographic, philosophical.) This minor is designed to meet the needs of University of Minnesota students who may not already have training in reading music, but who nonetheless feel music's power, and who wish to deepen their understanding. The minor allows students to explore the diversity of the worlds musics including popular, classical, and folk musics from Minnesota and around the world. Undergraduate students from any college or department at the University of Minnesota may deepen their knowledge of music through this minor, creating a vibrant and diverse cohort of students learning, studying, and playing music together.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Foundation Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)
• MUS 1804 - World Music [AH, GP] (3.0 cr)

Music Studies
Take 4 or more course(s) totaling exactly 12 credit(s) from the following:
Take at most 3 credit(s) from the following:
• MUS 1013 - Rock I: The Historical Origins and Development of Rock Music to 1970 [AH, DSJ] (3.0 cr)
• MUS 1014 - Rock II: Rock Music from 1970 to the Present [DSJ, AH] (3.0 cr)
• MUS 1501 - Theory and Analysis of Tonal Music I (2.0 cr)
• MUS 1511 - Ear-Training and Sight-Singing I (1.0 cr)
• Take 3 or more course(s) totaling 9 or more credit(s) from the following:
  • MUED 5750 - Topics in Music Education (1.0 - 4.0 cr)
  • MUS 3506 - Theory and Analysis of American Popular Music (3.0 cr)
  • MUS 3601W - History of Western Music I [WI] (3.0 cr)
  • MUS 5731 - Jazz and Modernism (3.0 cr)
  • MUS 5805 - Worlds of Improvisation (3.0 cr)

Ensembles
Students complete a minimum of 5 ensemble enrollments including at least 2 different ensembles.
Take 5 or more course(s) totaling 5 - 10 credit(s) from the following:
• MUS 3380 - Gospel Choir (2.0 cr)
• MUS 5460 - World Music Ensemble (1.0 - 2.0 cr)
• MUS 5493 - Javanese Gamelan Music Ensemble (1.0 cr)
• MUS 5494 - West African Music Ensemble (1.0 cr)
• MUS 5490 - Percussion Ensemble (1.0 cr)
Twin Cities Campus
Aerospace Engineering and Mechanics B.A.E.M.
Aerospace Engineering & Mechanics
College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 122
• Required credits within the major: 102
• Degree: Bachelor of Aerospace Engineering and Mechanics

The mission of the bachelor of aerospace engineering and mechanics (B.A.E.M.) program is to produce graduates who are prepared to enter and sustain the practice of aerospace engineering and related fields, or to pursue advanced studies. This mission is consistent with the mission of the University in learning and teaching, and with the mission of the College of Science and Engineering: to provide a rigorous and stimulating education for its undergraduate majors and to provide programs of instruction in engineering that meet nationally accepted standards for practice of the profession of engineering.

Aerospace engineering is a multidisciplinary field that encompasses many areas of science and engineering and plays a major role in the technological advancement of society. As a constantly changing profession, aerospace engineering is concerned with a wide range of problems and the latest technologies. An aerospace engineer must have a comprehensive fundamental education in mathematics, physical sciences, and engineering sciences. The four-year program leading to the B.A.E.M. provides this broad background.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics Core
MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1272 - Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)
MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Physics Core
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Chemistry Core
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Statics Core
AEM 2011 - Statics (3.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 35 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

AEM Core
- AEM 2012 - Dynamics (3.0 cr)
- AEM 2301 - Mechanics of Flight (3.0 cr)
- AEM 3031 - Deformable Body Mechanics (3.0 cr)
- AEM 4201 - Fluid Mechanics (4.0 cr)
- AEM 3101 - Mathematical Modeling and Simulation in Aerospace Engineering (2.0 cr)
- AEM 4202 - Aerodynamics (4.0 cr)
- AEM 4301 - Orbital Mechanics (3.0 cr)
- AEM 4501 - Aerospace Structures (3.0 cr)
- AEM 4601 - Instrumentation Laboratory (3.0 cr)
- AEM 4331 - Aerospace Vehicle Design (4.0 cr)
- AEM 4602W - Aeromechanics Laboratory [WI] (4.0 cr)
- AEM 4203 - Aerospace Propulsion (4.0 cr)
- AEM 4303W - Flight Dynamics and Control [WI] (3.0 cr)

Math, Science, and Engineering
- EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
- EE 3006 - Fundamentals of Electrical Engineering Laboratory (1.0 cr)
- ME 3324 - Introduction to Thermal Science (3.0 cr)
  or ME 3333 - Heat Transfer (3.0 cr)
- CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
- MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
  or MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
- PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
  or PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
  or PHYS 2503H - Honors Physics III (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2574H - Honors Calculus IV (4.0 cr)

Technical Electives
One technical elective course may be 2xxx or above, while the other two must be 4xxx or above. Only one course may be an independent study course or a global seminar. Courses like BAE 4744, IOFT 4101, most IE courses, and courses from the School of Management cannot be used to fulfill this requirement.

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

Lower Level Technical Electives
Other 2xxx and 3xxx level Math, Science, or Engineering courses may also count with permission. CHEM 1062 and 1066 are exceptions to the 2xxx or above lower level requirement.

Take 0 - 4 credit(s) from the following:
- AST 2001 - Introduction to Astrophysics (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
- BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- CSCI 2021 - Machine Architecture and Organization (4.0 cr)
- MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
- ME 2011 - Introduction to Engineering (4.0 cr)
- ME 3331 - Thermodynamics (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
• CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)

**Fluids Technical Electives**
A faculty advisor is required for AEM 4293. Honors students may choose to take AEM 5247 or 5253.
Take 0 or more course(s) from the following:
• AEM 4293 - Directed Studies in Fluid Mechanics (1.0 - 3.0 cr)
• AEM 4247 - Hypersonic Aerodynamics (3.0 cr)
  or AEM 5247 - Hypersonic Aerodynamics (3.0 cr)
• AEM 4253 - Computational Fluid Mechanics (3.0 cr)
  or AEM 5253 - Computational Fluid Mechanics (3.0 cr)

**Aerospace Systems Technical Electives**
A faculty advisor is required for AEM 4493. Honors students may choose to take AEM 5247 or 5253.
Take 0 or more course(s) from the following:
• AEM 4305 - Spacecraft Attitude Dynamics and Control (3.0 cr)
• AEM 4321 - Automatic Control Systems (3.0 cr)
• AEM 4493 - Directed Studies in Aerospace Systems (1.0 - 3.0 cr)
• AEM 5401 - Intermediate Dynamics (3.0 cr)
• AEM 5451 - Optimal Estimation (3.0 cr)
• AEM 5651 - Aeroelasticity (3.0 cr)

**Build Courses**
Only one course may be used as a technical elective.
Take 0 - 1 course(s) from the following:
• AEM 4333 - Aerospace Design: Special Projects (3.0 cr)
• AEM 5333 - Design-to-Flight: Small Uninhabited Aerial Vehicles (3.0 cr)

**Structures and Solids Technical Electives**
A faculty advisor is required for AEM 4593. Honors students may choose to take AEM 5581.
Take 0 or more course(s) from the following:
• AEM 4502 - Computational Structural Analysis (3.0 cr)
• AEM 4511 - Mechanics of Composite Materials (3.0 cr)
• AEM 4593 - Directed Studies: Solid Mechanics (1.0 - 3.0 cr)
• AEM 5501 - Continuum Mechanics (3.0 cr)
• AEM 5503 - Theory of Elasticity (3.0 cr)
• AEM 4581 - Mechanics of Solids (3.0 cr)
  or AEM 5581 - Mechanics of Solids (3.0 cr)

**Honors Thesis Technical Elective**
Using AEM 4894 as a technical elective requires completion of your honors thesis in order to complete your degree.
Take 0 or more course(s) from the following:
• AEM 4894 - Directed Studies: Senior Honors Thesis (3.0 cr)

**Other Possible Technical Electives**
Any mathematics, science, or engineering course of technical nature that is not listed below may be used as technical electives by permission. Contact the AEM Director of Undergraduate Studies.
Take 0 or more course(s) from the following:
• AST 4001 - Astrophysics I (4.0 cr)
• AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
• BIOL 4003 - Genetics (3.0 cr)
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)
• EE 4233 - State Space Control System Design (3.0 cr)
• IE 5111 - Systems Engineering I (2.0 cr)
• MATH 4152 - Elementary Mathematical Logic (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• ME 5286 - Robotics (4.0 cr)
• ME 5341 - Case Studies in Thermal Engineering and Design (4.0 cr)
• ME 5351 - Computational Heat Transfer (4.0 cr)
• ME 5446 - Introduction to Combustion (4.0 cr)
• MOT 4010 - Management of Science and Technology in the Middle East, Global Seminar [GP] (3.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• PHYS 4001 - Analytical Mechanics (4.0 cr)
• CSCI 4061 - Introduction to Operating Systems (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• ME 4231 - Motion Control Laboratory (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• LAAS 5050 - Integrated Topics in Land & Atmospheric Science (3.0 cr)
• MATS 4594 - Directed Research in Materials Science (1.0 - 3.0 cr)

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• AEM 4303W - Flight Dynamics and Control [WI] (3.0 cr)
• AEM 4602W - Aeromechanics Laboratory [WI] (4.0 cr)
Twin Cities Campus
Astrophysics B.S. Astrop.
Astrophysics, Minnesota Institute for
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 83 to 88
- Degree: Bachelor of Science in Astrophysics

The astrophysics program enables students to tackle complex and ill-defined problems within the physical sciences. The program prepares students for careers in professional astronomy, computational astrophysics, secondary education in the physical sciences, ROTC programs in the Air Force or Navy, data analysis, or laboratory science.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 7 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics Core
Calculus I
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1272 - Calculus II (4.0 cr)
- MATH 1372 - CSE Calculus II (4.0 cr)
- MATH 1572H - Honors Calculus II (4.0 cr)

Linear Algebra and Differential Equations
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- MATH 2574H - Honors Calculus IV (4.0 cr)

Physics Core
Physics I
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Physics II
- PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
- PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Physics III
- PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
- PHYS 2503H - Honors Physics III (4.0 cr)
- PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)

Lower Division Physics Requirement
- PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).
Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

In addition to the core coursework, students will follow a professional astrophysics plan and complete the respective additional requirements, unless they opt into the secondary education sub-plan. These requirements are subject to departmental review for each student. If selected, the secondary education sub-plan needs to be added to the students program no later than the junior year.

At least half of upper division (3xxx level or higher) credits that satisfy major requirements must be earned at the University of Minnesota Twin Cities campus, which is 18-20 credits depending on whether or not the secondary education sub-plan is selected.

Core Coursework
Astrophysics Requirements
AST 2001 - Introduction to Astrophysics (4.0 cr)
Take 2 or more course(s) totaling 8 or more credit(s) from the following:
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)
- AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
- AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- AST 5012 - The Interstellar Medium (4.0 cr)
- AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
- AST 5201 - Methods of Experimental Astrophysics (4.0 cr)

Core Physics Requirements
PHYS 2601 - Quantum Physics (4.0 cr)
PHYS 3041 - Mathematical Methods for Physicists (3.0 cr)
PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)
PHYS 4001 - Analytical Mechanics (4.0 cr)
PHYS 4002 - Electricity and Magnetism (4.0 cr)

Multivariable Calculus
MATH 2263 - Multivariable Calculus (4.0 cr)

or
MATH 2573H - Honors Calculus III (4.0 cr)

or
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- AST 4994W - Directed Research [WI] (2.0 - 5.0 cr)
- PHIL 3601W - Scientific Thought [WI] (4.0 cr)
- PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
- HSCI 4121W - History of 20th-Century Physics [WI] (3.0 cr)
- PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)

Specializations in Astrophysics
Astrophysics (no specialization)
Electrodynamics and Waves
PHYS 4303 - Electrodynamics and Waves (3.0 cr)

Technical Electives
Technical electives include any mathematics, science or engineering course of technical nature approved by the student's department adviser. Only one course can be a directed research or directed study course. Students are encouraged to discuss options for technical electives with their departmental adviser as additional options may be approved based on individual interests and goals.

Take 16 or more credit(s) from the following:
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)
- AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
- AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- AST 5012 - The Interstellar Medium (4.0 cr)
- AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
- AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
- PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
• EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
• EE 3006 - Fundamentals of Electrical Engineering Laboratory (1.0 cr)
• Take no more than 1 course(s) from the following:
  • CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  • CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  • CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
• PHYS 3993 - Directed Studies (1.0 - 5.0 cr)

Senior Project
This requirement can be met with directed research in astrophysics or a project tailored to the specific area of interest.

AST 4994W - Directed Research [WI] (2.0 - 5.0 cr)

- OR -

Secondary Education Sub-plan

Program Sub-plans
A sub-plan is not required for this program.

Secondary Education
This sub-plan is designed for students who are interested in teaching science at the secondary-school level. The program offers a versatile broad-based education. It is particularly useful to students who are planning on teaching in Minnesota, as it has been optimized to fit well with the state licensure procedures.

General Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

Philosophical Foundations
PHIL 1005 - Scientific Reasoning (4.0 cr)

or PHIL 3601W - Scientific Thought [WI] (4.0 cr)

Historical and Social Perspectives of Science
Take 1 or more course(s) from the following:
  • PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
  • HSCI 4121W - History of 20th-Century Physics [W] (3.0 cr)
  • HSCI 3814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
  • HSCI 3815 - Making Modern Science: Atoms, Genes and Quanta [HIS, GP] (3.0 - 4.0 cr)

Methods of Experimental Physics
PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)

Technical Electives
Technical electives include any upper-level mathematics, science or engineering course of technical nature approved by the student's department adviser. Only one course can be a directed research or directed study course. Students are encouraged to discuss options for technical electives with their departmental adviser as additional options may be approved based on individual interests and goals.

Take 5 or more credit(s) from the following:
  • AST 4001 - Astrophysics I (4.0 cr)
  • AST 4002 - Astrophysics II (4.0 cr)
  • AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
  • AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  • AST 5012 - The Interstellar Medium (4.0 cr)
  • AST 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
  • AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
  • PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  • PHYS 4101 - Quantum Mechanics (4.0 cr)
  • PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
  • PHYS 4303 - Electrodynamics and Waves (3.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
• EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
• EE 3006 - Fundamentals of Electrical Engineering Laboratory (1.0 cr)
• Take no more than 1 course(s) from the following:
  • CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  • CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  • CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
  • PHYS 3993 - Directed Studies (1.0 - 5.0 cr)
• The Senior Thesis elective option for the Secondary Education emphasis involves directed research in astrophysics or a project tailored to the specific area of interest.
  • AST 4994W - Directed Research [WI] (2.0 - 5.0 cr)
Twin Cities Campus
Biomedical Engineering B.Bm.E.
Department of Biomedical Engineering
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 124
- Required credits within the major: 108
- Degree: Bachelor of Biomedical Engineering

Biomedical engineers apply the fundamentals of mathematics, physics, chemistry, and biology to solve medically relevant problems. Examples of biomedical engineering activities include medical device design, fabrication and testing, prosthesis fabrication, ergonomics and human factors, physiological function monitoring, home health care technology development, biomedical informatics, functional imaging and tomography, biomaterial development and biocompatibility, artificial tissue and organ fabrication, cell- and biomolecule-based sensors and therapeutics, gene therapy development, and biomedical microsystems.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 12 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](http://admissions.umn.edu).

Required prerequisites
Mathematics

**Calculus I**
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

**Calculus II**
- MATH 1272 - Calculus II (4.0 cr)
- or MATH 1372 - CSE Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)

Linear Algebra & Differential Equations OR Multivariable Calculus
Both linear algebra and differential equations and multivariable calculus are required to graduate from the program. Only one is required for admission to the program.

**Linear Algebra & Differential Equations**
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2574H - Honors Calculus IV (4.0 cr)
- or Multivariable Calculus
  - MATH 2263 - Multivariable Calculus (4.0 cr)
  - or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
  - or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Sciences
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- or CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Preparatory Courses
BMEN 2401 - Programming for Biomedical Engineers (2.0 cr)
BMEN 2501 - Cellular and Molecular Biology for Biomedical Engineers [BIOL] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 29 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Statistics
STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

Major Courses
BMEN 1601 - Biomedical Engineering Undergraduate Seminar I (1.0 cr)
BMEN 1602 - Biomedical Engineering Undergraduate Seminar II (1.0 cr)
BMEN 3011 - Biomechanics (3.0 cr)
BMEN 3111 - Biomedical Transport Processes (3.0 cr)
BMEN 3211 - Bioelectricity and Bioinstrumentation (3.0 cr)
BMEN 3311 - Biomaterials (3.0 cr)
BMEN 3411 - Biomedical Systems Analysis (3.0 cr)
BMEN 4001W - Biomedical Engineering Design I [WI] (3.0 cr)
BMEN 4002W - Biomedical Engineering Design II [WI] (3.0 cr)
PHSL 3061 - Principles of Physiology (4.0 cr)
PHSL 3701 - Physiology Laboratory (2.0 cr)
BMEN 2101 - Biomedical Thermodynamics (3.0 cr)
BMEN 3015 - Biomechanics Lab (1.0 cr)
BMEN 3215 - Bioelectricity and Bioinstrumentation Lab (1.0 cr)
BMEN 3315 - Biomaterials Lab (1.0 cr)
BMEN 3115 - Biomedical Transport Processes Lab (1.0 cr)
BMEN 3415 - Biomedical Systems Analysis Lab (1.0 cr)

Linear Algebra & Differential Equations OR Multivariable Calculus
Students must complete both linear algebra & differential equations and multivariable calculus to graduate from this program. One of these courses must be taken prior to enrollment in the program.

Linear Algebra & Differential Equations
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

or Multivariable Calculus
MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• BMEN 4001W - Biomedical Engineering Design I [WI] (3.0 cr)
• BMEN 4002W - Biomedical Engineering Design II [WI] (3.0 cr)
Program Sub-plans
Students are required to complete one of the following sub-plans.

Bioelectricity/Bioinstrumentation
In bioelectricity/instrumentation (BEI), we seek to record, process, image, and control biomedical signals and develop instrumentation for biological research and medical applications. Specific examples of bioelectricity and instrumentation include cardiac pacemakers for restoring heart rhythm, brain-computer interfaces to link the brain and environment, and anatomical and functional imaging systems (optical, ultrasound or magnetic resonance imaging) to assess tissue conditions at various scales and resolution. Past students in the BEI emphasis area have gone on to work in industry immediately following graduation or to study in graduate school or medical school.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

**Bioelec/Bioinstr**
Take 7 or more course(s) totaling 27 or more credit(s) from the following:

**Engineering**
Take 14 or more credit(s) from the following:
- BMEN 4011 - CAD/CAE of Bioelectrical Devices (1.0 cr)
- BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
- BMEN 4015 - CAE of Biomechanical/Transport Devices (1.0 cr)
- BMEN 5401 - Advanced Biomedical Imaging (3.0 cr)
- BMEN 5411 - Neural Engineering (3.0 cr)
- BMEN 5412 - Neuromodulation (3.0 cr)
- BMEN 5101 - Advanced Bioelectricity and Instrumentation (3.0 cr)
- BMEN 5111 - Biomedical Ultrasound (3.0 cr)
- BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
- BMEN 5413 - Neural Decoding and Interfacing (3.0 cr)
- BMEN 5421 - Introduction to Biomedical Optics (3.0 cr)
- BMEN 5601 - Cardiovascular Devices (1.0 cr)
- EE 3161 - Semiconductor Devices (3.0 cr)
- EE 3601 - Transmission Lines, Fields, and Waves (3.0 cr)
- EE 5601 - Introduction to RF/Microwave Engineering (3.0 cr)
- EE 4607 - Wireless Hardware System Design (3.0 cr)
- EE 4623 - Introduction to Modern Optics (3.0 cr)
- EE 5621 - Physical Optics (3.0 cr)
- EE 5624 - Optical Electronics (4.0 cr)
- EE 5627 - Optical Fiber Communication (3.0 cr)
- EE 5640 - Introduction to Nano-Optics (3.0 cr)
- EE 5393 - Circuits, Computation, and Biology (3.0 cr)
- EE 4231 - Linear Control Systems: Designed by Input/Output Methods (3.0 cr)
- ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• ME 5247 - Stress Analysis, Sensing, and Transducers (4.0 cr)
• ME 5286 - Robotics (4.0 cr)

**Directed Research/Study/Co-Op**
Take 0 - 6 credit(s) from the following:
• BMEN 4710 - Directed Research (1.0 - 4.0 cr)
• BMEN 4720 - Directed Study (1.0 - 4.0 cr)
• BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
• BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
• BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

**Science**
Take 0 or more credit(s) from the following:
• PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
• MPHY 5178 - Physical Principles of Magnetic Resonance Imaging (3.0 cr)
• PHSL 4021 - Advanced Physiology and Bioengineering: Bionic Human (3.0 cr)

**Biomaterials**
Students in the emphasis area of biomaterials are expected to become acquainted with the general principles of designing, synthesizing, processing, and characterizing biomaterials and learn to use biomaterials to solve problems in biology and medicine. Courses on life science, fundamentals of materials science and engineering, and interactions between materials and living elements are relevant.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

**Biomaterials**
Take 7 or more course(s) totaling 27 or more credit(s) from the following:

**Engineering**
Take 14 or more credit(s) from the following:
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• CHEN 4214 - Polymers (3.0 cr)
• MATS 4214 - Polymers (3.0 cr)
• BMEN 5031 - Engineering Extracellular Matrices (3.0 cr)
• MATS 4221 - Materials Performance (4.0 cr)
• MATS 4301W - Materials Processing [WI] (4.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• MATS 3801 - Structural Characterization Lab (4.0 cr)
• MATS 3012 - Metals and Alloys (3.0 cr)
• AEM 4511 - Mechanics of Composite Materials (3.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• AEM 4501 - Advanced Biomechanics (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
Biomechanics

Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged). All students must meet with their SPA to get approval on their first ESE worksheet.

If you plan to take a course from another department/program or that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. Each department/program must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

### Biomechanics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMEN 5351</td>
<td>Cell Engineering (3.0 cr)</td>
</tr>
<tr>
<td>BMEN 5701</td>
<td>Cancer Bioengineering (3.0 cr)</td>
</tr>
<tr>
<td>AEM 4581</td>
<td>Mechanics of Solids (3.0 cr)</td>
</tr>
</tbody>
</table>

#### Directed Research/Study/Co-Op

Take 0 - 6 credit(s) from the following:

- BMEN 4710 - Directed Research (1.0 - 4.0 cr)
- BMEN 4720 - Directed Study (1.0 - 4.0 cr)
- BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
- BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
- BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

### Science

Take 0 or more credit(s) from the following:

- MICB 4131 - Immunology (3.0 cr)
- PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
- CHEM 2302 - Organic Chemistry I (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOL 4004 - Cell Biology (3.0 cr)
- BIOC 5444 - Muscle (3.0 cr)
- PHSL 5444 - Muscle (3.0 cr)
- GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)

#### Engineering

Take 7 or more course(s) totaling 27 or more credit(s) from the following:

- AEM 3031 - Deformable Body Mechanics (3.0 cr)
- BMEN 5201 - Advanced Biomechanics (3.0 cr)
- ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)

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The area of biomechanics is extremely broad, so before planning your electives, you should decide which of the two basic sub-disciplines is of greater interest to you: 1) Mechanics of Tissues and Biomaterials (this area emphasizes understanding how biological and biomedical materials deform under load. You will be preparing yourself to work on tissue mechanics problems (e.g., how much does a vessel expand in response to a change in pressure), how much does a heart valve leaflet deflect under a given load, or how much does a tendon stretch given a certain amount of tension) as well as on mechanical aspects of biomaterials selection (e.g., what vascular graft or stent materials would provide a good match to the native tissue?). 2) Kinematics and Biomechanical Design (this area emphasizes the design of biomechanical devices and how linkage systems behave. You will be preparing yourself to work on the design of mechanical systems for biomedical use (e.g., how one should design a knee brace to be as light as possible but still provide the necessary support) and to understand the dynamics of large scale motions (e.g., what causes the characteristic features of the various gait irregularities and how can they be corrected?).

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements:

1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e., courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is:
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   - 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total.
   - 4. A minimum of 19 credits at the 4000 level or higher.
   - 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total.

Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

#### Biomechanics

Take 7 or more course(s) totaling 27 or more credit(s) from the following:

- AEM 3031 - Deformable Body Mechanics (3.0 cr)
- BMEN 5201 - Advanced Biomechanics (3.0 cr)
- ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• AEM 5501 - Continuum Mechanics (3.0 cr)
• AEM 5503 - Theory of Elasticity (3.0 cr)
• AEM 4511 - Mechanics of Composite Materials (3.0 cr)
• AEM 4501 - Aerospace Structures (3.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
• BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
• BMEN 4015 - CAE of Biomechanical/Transport Devices (1.0 cr)
• MATS 3001 - Thermodynamics of Materials (3.0 cr)
• BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
• BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
• ME 3221 - Fundamentals of Design & Manufacturing (4.0 cr)
• ME 3222 - Mechanisms & Machine Design (4.0 cr)
• ME 4031W - Basic Mechanical Measurements Laboratory [WI] (4.0 cr)
• IE 5511 - Human Factors and Work Analysis (4.0 cr)
• ME 5281 - Feedback Control Systems (4.0 cr)
• ME 5221 - Computer-Assisted Product Realization (4.0 cr)
• AEM 4502 - Computational Structural Analysis (3.0 cr)

**Directed Research/Study/Co-Op**

Take 0 - 6 credit(s) from the following:
- BMEN 4710 - Directed Research (1.0 - 4.0 cr)
- BMEN 4720 - Directed Study (1.0 - 4.0 cr)
- BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
- BMEN 4996 - Industrial Assignment I: Co-op Program (2.0 cr)
- BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

**Science**

Take 0 or more credit(s) from the following:
- RSC 5135 - Advanced Biomechanics I: Kinematics (3.0 cr)
- RSC 5231 - Clinical Biomechanics (2.0 - 5.0 cr)
- BIOC 5444 - Muscle (3.0 cr)
- PHSL 5444 - Muscle (3.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- RSC 5235 - Advanced Biomechanics II: Kinetics (3.0 cr)

**Biomedical Transport Processes**

BTP involves three fundamental processes: momentum transfer, mass transfer, and heat transfer. They share similar biophysical and mathematical descriptions. Momentum transfer underlies flow fluid in the subject known as fluid mechanics. Applications of fluid mechanics in BME range from predicting blood flow in vessels, to flow of samples in "lab on chip" microfluidic systems, to flow of cell culture medium through tissue engineered cartilage in bioreactors. Mass and heat transfer refer to the ability to deliver molecules and energy, respectively, from a source to a target. Applications of mass and heat transfer range from predicting blood oxygenation rates in capillaries from oxygen in lung alveoli and in hollow fibers from pure oxygen gas in "heart lung machines," to movement of mRNA generated in the cell nucleus to cytoplasmic ribosomes. While appropriate and accurate experimentation is also key on this subject, BTP is highly mathematical and computational in nature, since the basis of making such predictions is formulating and solving the equations that govern momentum, mass, and energy balances. This is reflected in the number of mathematical and computational ESE courses listed for this EA. As suggested in the above applications, BTP is relevant in almost every physiological / cellular process and almost all medical devices. Thus, this EA is relevant for students interested in pursuing both employment and advanced studies (MD and PhD) upon graduation.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.
Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

**Biomedical Transport Processes**

Take 7 or more course(s) totaling 27 or more credit(s) from the following:

**Engineering**

Take 14 or more credit(s) from the following:
- BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
- AEM 5253 - Computational Fluid Mechanics (3.0 cr)
- BMEN 5041 - Tissue Engineering (3.0 cr)
- BMEN 5321 - Microfluidics in Biology and Medicine (3.0 cr)
- BMEN 5351 - Cell Engineering (3.0 cr)
- CHEN 4702 - Advanced Undergraduate Rheology (2.0 cr)
- CHEN 4704 - Advanced Undergraduate Physical Rate Processes I: Transport (3.0 cr)
- AEM 3031 - Deformable Body Mechanics (3.0 cr)
- BBE 4013 - Transport in Biological Processes II (3.0 cr)
- BBE 4713 - Biological Process Engineering (3.0 cr)
- BMEN 5701 - Cancer Bioengineering (3.0 cr)
- CHEN 4701 - Applied Math (3.0 cr)
- CHEN 5751 - Biochemical Engineering (3.0 cr)
- ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
- CEGE 5543 - Introductory Environmental Fluid Mechanics (4.0 cr)
- CHEN 5531 - Electrochemical Engineering and Renewable Energy (3.0 cr)
- ME 3333 - Heat Transfer (3.0 cr)
- BMEN 5031 - Engineering Extracellular Matrices (3.0 cr)
- BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
- BMEN 4015 - CAE of Biomechanical/Transport Devices (1.0 cr)
- IE 5522 - Quality Engineering and Reliability (4.0 cr)
- BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
- ME 5351 - Computational Heat Transfer (4.0 cr)
- BMEN 5001 - Advanced Biomaterials (3.0 cr)
- BMEN 5111 - Biomedical Ultrasound (3.0 cr)
- BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
- BMEN 5601 - Cardiovascular Devices (1.0 cr)
- ME 5341 - Case Studies in Thermal Engineering and Design (4.0 cr)
- ME 5344 - Thermodynamics of Fluid Flow With Applications (4.0 cr)

**Directed Research/Study/Co-Op**

Take 0 - 6 credit(s) from the following:
- BMEN 4710 - Directed Research (1.0 - 4.0 cr)
- BMEN 4720 - Directed Study (1.0 - 4.0 cr)
- BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
- BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
- BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

**Science**

Take 0 or more credit(s) from the following:
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
- CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
- STAT 5303 - Designing Experiments (4.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOL 4003 - Genetics (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- BIOC 5444 - Muscle (3.0 cr)
- PHSL 5444 - Muscle (3.0 cr)
Cell and Molecular Bioengineering

In cell and molecular bioengineering (CMBE), we take advantage of natural biological processes for the advancement of industrial biotechnologies. For example, by harnessing the power of genetic manipulation, we can control cellular production of small molecules, enzymes (catalysts) and other biomolecules that can be used in the treatment of disease and/or in the development of nanoscale medical devices. Additionally, one desperate need is to improve approaches to discovering new drugs, and students in this emphasis area will be well positioned to pursue graduate work and ultimately a career in the pharmaceutical industry.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

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Cell and Molecular Bioengineering

Take 7 or more course(s) totaling 27 or more credit(s) from the following:

Engineering

Take 14 or more credit(s) from the following:
• CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)
• CHEN 5751 - Biochemical Engineering (3.0 cr)
• BIOC 5351 - Protein Engineering (3.0 cr)
• BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
• BMEN 5351 - Cell Engineering (3.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• BMEN 5701 - Cancer Bioengineering (3.0 cr)
• BMEN 5411 - Neural Engineering (3.0 cr)
• BMEN 5601 - Cardiovascular Devices (1.0 cr)
• BMEN 4013 - CAD/CAE of Biomechanical/transport Devices (1.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)

Directed Research/Study/Co-Op

Take 0 - 6 credit(s) from the following:
• BMEN 4710 - Directed Research (1.0 - 4.0 cr)
• BMEN 4720 - Directed Study (1.0 - 4.0 cr)
• BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
• BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
• BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

Science

Take 0 or more credit(s) from the following:
• CHEM 2302 - Organic Chemistry II (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
• BIOC 5528 - Spectroscopy and Kinetics (4.0 cr)
Cell and Tissue Engineering

In cell and tissue engineering (CTE), we seek to control biological function at the cell and tissue level. Specific examples of tissue engineering include bioreactors for controlled physical/chemical stimuli, drug, and nutrient transport through tissue, and tissue mechanics. Specific examples of cell engineering include control of cell migration, division, growth, and death through therapeutic drugs or other molecular agents, such as those released from drug eluting stents. Students should be aware that there are relatively few bachelors degree level positions that directly relate to CTE. Rather, most of the positions in CTE tend to be filled by PhD level engineers, and so further study is usually required. If a student is considering further study, such as graduate or medical school, this sub-plan will be useful preparation, provided the student is intrinsically interested in CTE.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

Cell and Tissue Engineering

Take 7 or more course(s) totaling 27 or more credit(s) from the following:

**Engineering**

Take 14 or more credit(s) from the following:

• BMEN 5351 - Cell Engineering (3.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• BMEN 5321 - Microfluidics in Biology and Medicine (3.0 cr)
• BMEN 5601 - Cardiovascular Devices (1.0 cr)
• BMEN 5701 - Cancer Bioengineering (3.0 cr)
• CHEN 5751 - Biochemical Engineering (3.0 cr)
• BMEN 3151 - Medical Device Practicum (1.0 cr)
• ME 5351 - Computational Heat Transfer (4.0 cr)
• BMEN 5031 - Engineering Extracellular Matrices (3.0 cr)
• BMEN 5361 - 3D Bioprinting (2.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• CHEN 3940 - Biological and Medical Multiscale Modeling (3.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
• PHCL 4343 - Pharmacology of the Synapse (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
• BMEN 5361 - 3D Bioprinting (2.0 cr)
• BMEN 5351 - Cell Engineering (3.0 cr)
• CHEM 5245 - Introduction to Drug Design (3.0 cr)
• MEDC 5245 - Introduction to Drug Design (3.0 cr)
• CHEM 4011 - Mechanisms of Chemical Reactions (3.0 cr)
• CHEN 5751 - Biochemical Engineering (3.0 cr)
• BIOL 4003 - Genetics (3.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• BMEN 5321 - Microfluidics in Biology and Medicine (3.0 cr)
• BMEN 5601 - Cardiovascular Devices (1.0 cr)
• BMEN 5701 - Cancer Bioengineering (3.0 cr)
• CHEN 5751 - Biochemical Engineering (3.0 cr)
• BMEN 3151 - Medical Device Practicum (1.0 cr)
• ME 5351 - Computational Heat Transfer (4.0 cr)
• BMEN 5031 - Engineering Extracellular Matrices (3.0 cr)
• BMEN 5361 - 3D Bioprinting (2.0 cr)
• **Directed Research/Study/Co-Op**
  Take 0 - 6 credit(s) from the following:
  - BMEN 4710 - Directed Research (1.0 - 4.0 cr)
  - BMEN 4720 - Directed Study (1.0 - 4.0 cr)
  - BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
  - BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
  - BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

• **Science**
  Take 0 or more credit(s) from the following:
  - BIOL 4003 - Genetics (3.0 cr)
  - BIOL 4004 - Cell Biology (3.0 cr)
  - GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
  - GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
  - GCD 4151 - Molecular Biology of Cancer (3.0 cr)
  - GCD 4161 - Developmental Biology (3.0 cr)
  - GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
  - BIOC 5444 - Muscle (3.0 cr)
  - PHSL 5444 - Muscle (3.0 cr)
  - MICB 4131 - Immunology (3.0 cr)
  - BIOC 4351 - Protein Engineering (3.0 cr)
  - BIOC 5528 - Spectroscopy and Kinetics (4.0 cr)
  - GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
  - GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
  - KIN 3027 - Human Anatomy for Kinesiology Students (4.0 cr)
  - NEUR 5230 - Cerebrovascular Hemodynamics and Diseases I (4.0 cr)
  - RSC 5101 - Mathematical Tools for Research Applications in Health, Rehab, and Human Movement Sciences (1.0 cr)
  - RSC 5106 - Introduction to Rehabilitation Science (1.0 cr)
  - RSC 5135 - Advanced Biomechanics I: Kinematics (3.0 cr)
  - RSC 5231 - Clinical Biomechanics (2.0 - 5.0 cr)
  - RSC 5281 - Physiology for Physical Rehabilitation (2.0 - 4.0 cr)

**Digital Health**

The Digital Health Sub-plan aims to prepare BME students to manage and analyze big data problems that face the medical industry. As medical health records are becoming digitized it provides the opportunity to use machine learning tools for medical discovery. Students will learn how to identifying disease biomarkers and traits that identify patients that are at risk for diseases and assess the best therapies suited to the patients needs. Students in this program will take machine learning and data management classes.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).
Take 14 or more credit(s) from the following:
• CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
• CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• BMEN 4011 - CAD/CAE of Bioelectrical Devices (1.0 cr)
• BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
• BMEN 4015 - CAE of Biomechanical/Transport Devices (1.0 cr)

**Directed Research/Study/Co-Op**

Take 0 - 6 credit(s) from the following:
• BMEN 4710 - Directed Research (1.0 - 4.0 cr)
• BMEN 4720 - Directed Study (1.0 - 4.0 cr)
• BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
• BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
• BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

**Science**

Take 0 or more credit(s) from the following:
• BIOT 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
• HINF 5430 - Foundations of Health Informatics I (3.0 cr)
• HINF 5431 - Foundations of Health Informatics II (3.0 cr)
• HINF 5430 - Foundations of Precision Medicine Informatics (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)

**Medical Device Design**

The medical device area covers an extreme range from implantable coronary artery stents to refrigerator sized blood testers. Some courses, such as Advanced Biomaterials, Computer Aided Product Realization, Quality Engineering, Design and Manufacturing, and Designing Experiments could be helpful for any career in devices. Students interested in electronic devices (which can range from pacemakers to giant blood testers) might consider the EE courses covering Fundamentals, Microsystems, Microcontrollers, Communications, and Analog/Digital Design. Students considering work in the broad area of stimulation and monitoring (pacemakers to nerve stimulators to EKGs) should take Advanced Bioelectricity. For a career in external medical devices (such as cardiac assist, dialysis, or blood testers), the courses on Advanced Biomedical Transport, Electric Drives, Motion Control, Advanced Mechanisms Design, Stress Analysis/Sensing/Transducers, and Robotics are helpful.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

Students should review the course descriptions and select an appropriate set of courses consistent with the degree requirements. Students should then enter the selected courses on the Engineering and Science Elective (ESE) Planning Worksheet and schedule a meeting with the appropriate Sub-Plan Advisor (SPA). Students should discuss their ESE course plans and obtain the signature/approval of the appropriate SPA on the ESE worksheet before submitting it to the Director of Undergraduate Studies (DUS) for departmental signature/approval. Department signature/approval of the ESE plan is required for graduation. Changes to the plan must be re-signed/re-approved by the SPA and DUS. It is important to note that the list below is not definitive. Should you find a course that is not listed below that you feel would be beneficial to your ESE course plan, you can present it to SPA and get their approval to count said course towards your ESE requirements. All students must meet with their SPA to get approval on their first ESE worksheet. Thereafter, changes to your ESE course plan can be approved via SPA signature (meeting not required but is encouraged).

**Medical Device Design**

Take 7 or more course(s) totaling 27 or more credit(s) from the following:
Engineering
Take 14 or more credit(s) from the following:

• BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5101 - Advanced Bioelectricity and Instrumentation (3.0 cr)
• BMEN 5111 - Biomedical Ultrasound (3.0 cr)
• BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
• BMEN 5351 - Cell Engineering (3.0 cr)
• BMEN 5411 - Neural Engineering (3.0 cr)
• BMEN 5412 - Neuromodulation (3.0 cr)
• BMEN 5413 - Neural Decoding and Interfacing (3.0 cr)
• BMEN 5601 - Cardiovascular Devices (1.0 cr)
• BMEN 2151 - Introductory Medical Device Prototyping (3.0 cr)
• BMEN 3151 - Medical Device Practicum (1.0 cr)
• BMEN 5361 - 3D Bioprinting (2.0 cr)
• BMEN 4011 - CAD/CAE of Bioelectrical Devices (1.0 cr)
• BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
• BMEN 4015 - CAE of Biomechanical/Transport Devices (1.0 cr)
• ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)
• CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
• CSCI 5609 - Visualization (3.0 cr)
• EE 2361 - Introduction to Microcontrollers (4.0 cr)
• EE 3115 - Analog Electronics (3.0 cr)
• EE 3940 - Special Topics in Electrical and Computer Engineering (1.0 - 4.0 cr)
• EE 4111 - Advanced Analog Electronics Design (4.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)
• EE 4501 - Communications Systems (3.0 cr)
• EE 4505 - Communications Systems Laboratory (1.0 cr)
• EE 4701 - Electric Drives (3.0 cr)
• EE 4703 - Electric Drives Laboratory (1.0 cr)
• ME 3221 - Fundamentals of Design & Manufacturing (4.0 cr)
• ME 3222 - Mechanisms & Machine Design (4.0 cr)
• ME 4031W - Basic Mechanical Measurements Laboratory [WI] (4.0 cr)
• ME 4231 - Motion Control Laboratory (4.0 cr)
• ME 5223 - Materials in Design (4.0 cr)
• ME 5266 - Robotics (4.0 cr)
• ME 5241 - Computer-Aided Engineering (4.0 cr)
• IE 5522 - Quality Engineering and Reliability (4.0 cr)
• IE 5511 - Human Factors and Work Analysis (4.0 cr)
• IE 5541 - Project Management (4.0 cr)

Directed Research/Study/Co-Op
Take 0 - 6 credit(s) from the following:

• BMEN 4710 - Directed Research (1.0 - 4.0 cr)
• BMEN 4720 - Directed Study (1.0 - 4.0 cr)
• BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
• BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
• BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

Science
Take 0 or more credit(s) from the following:

• ANAT 3601 - Principles of Human Anatomy (3.0 cr)
• ANAT 3611 - Principles of Human Anatomy (3.0 cr)
• ANAT 3602 - Principles of Human Anatomy Laboratory (2.0 cr)
• ANAT 3612 - Principles of Human Anatomy Laboratory (2.0 cr)
• ANAT 5150 - Human Gross Anatomy (5.0 cr)
Neural Engineering

In neural engineering, we use engineering principles to understand how the brain works and develop new technology to interact and treat the brain. The curriculum for this emphasis area is designed to teach you the basics of neuroanatomy and neurophysiology and the fundamentals of diseases such as Alzheimers, Parkinons, tinnitus, and epilepsy. You will also develop engineering skills such as signal processing, image processing, instrumentation and computational modeling as well as electrode design, amplifier and filter design, brain machine interfaces, cochlear implants, and deep brain stimulation. Students graduating from this emphasis area will be highly qualified for medical school, graduate school, or working in the burgeoning medical device industry dedicated to neural engineering.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total. Below is a list of suggested courses for your sub-plan. Upon entry to BME upper-division, students will be required to attend an information session and will be provided with additional resources/instructions which will further assist with selecting a course plan from the below list.

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### Neural Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BMEN 5411</td>
<td>Neural Engineering</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BMEN 5412</td>
<td>Neuromodulation</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BMEN 5413</td>
<td>Neural Decoding and Interfacing</td>
<td>3.0 cr</td>
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<tr>
<td>BMEN 5101</td>
<td>Advanced Bioelectricity and Instrumentation</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BMEN 5351</td>
<td>Cell Engineering</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>

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Information current as of September 02, 2020
• BMEN 5401 - Advanced Biomedical Imaging (3.0 cr)
• BMEN 5421 - Introduction to Biomedical Optics (3.0 cr)
• EE 3115 - Analog Electronics (3.0 cr)
• EE 4111 - Advanced Analog Electronics Design (4.0 cr)
• EE 4231 - Linear Control Systems: Designed by Input/Output Methods (3.0 cr)
• EE 4541 - Digital Signal Processing (3.0 cr)
• EE 5545 - Digital Signal Processing Design (3.0 cr)
• BMEN 4011 - CAD/CAE of Bioelectrical Devices (1.0 cr)
• BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
• BMEN 4015 - CAE of Biomechanical/Transport Devices (1.0 cr)
• BMEN 2151 - Introductory Medical Device Prototyping (3.0 cr)
• BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
• BMEN 5111 - Biomedical Ultrasound (3.0 cr)
• BMEN 5601 - Cardiovascular Devices (1.0 cr)
• BMEN 5701 - Cancer Bioengineering (3.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• IE 5541 - Project Management (4.0 cr)
• BMEN 5031 - Engineering Extracellular Matrices (3.0 cr)

**Directed Research/Study/Co-Op**

Take 0 - 6 credit(s) from the following:

• BMEN 4710 - Directed Research (1.0 - 4.0 cr)
• BMEN 4720 - Directed Study (1.0 - 4.0 cr)
• BMEN 4794H - Directed Research Honors (1.0 - 4.0 cr)
• BMEN 4896 - Industrial Assignment I: Co-op Program (2.0 cr)
• BMEN 4996W - Industrial Assignment II: Co-op Program [WI] (4.0 cr)

**Science**

Take 0 or more credit(s) from the following:

• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• CPMS 5101 - Introduction to Clinical Physiology and Movement Science (3.0 cr)
• NSCI 1001 - Fundamental Neuroscience: Understanding Ourselves [TS] (3.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• PHSL 5201 - Computational Neuroscience I: Membranes and Channels (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• BIOC 3021 - Biochemistry (3.0 cr)
• BIOL 4003 - Genetics (3.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
• PHSL 5444 - Muscle (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• PHSL 4021 - Advanced Physiology and Bioengineering: Bionic Human (3.0 cr)
• RSC 5101 - Mathematical Tools for Research Applications in Health, Rehab, and Human Movement Sciences (1.0 cr)

**Custom Sub-Plan**

Biomedical engineering (BME) encompasses a broad range of approaches to improving health through technology. To function as a biomedical engineer, it is important to go beyond a broad training in the core principles of BME to also gain a depth of expertise in one or more specialized areas of BME. To facilitate this, the department requires that 27 credits of advanced engineering and science coursework be completed beyond that in the core curriculum. These advanced courses have a coherent theme and meet the requirements specified in the "degree requirements" section. Because BME is a rapidly evolving field, it is important that the areas of emphasis not be rigidly codified, but rather that students be allowed to customize their advanced studies to suit their own particular interests. Thus, if students do not choose one of our predefined emphasis areas, they are able to work with the Director of Undergraduate Studies to create a customized course list for their area of interest.

It is necessary that the engineering and science elective (ESE) courses be technically coherent and that the courses be mainly in engineering and at an advanced level. In terms of specific requirements: 1. A specific sub-plan (which includes the option of developing a custom sub-plan) must be declared. 2. A maximum of 13 credits of pure science may be counted toward the total. The remaining 14 or more credits must be in engineering or in technical courses (i.e. courses offered through science and medical departments/programs) having significant engineering content, as determined by the appropriate Sub-Plan Advisor (SPA) in consultation with the Director of Undergraduate Studies (DUS) using the definition of engineering credits. The definition of engineering

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credits is: a. Any course offered by an engineering program, or b. Any course (or course component) that teaches students how to practically apply the knowledge of pure sciences. Students must consult the DUS about the number of engineering credits allowed for such courses. 3. A maximum of 4 credits of 1000 and 2000 level courses may be counted toward the total. 4. A minimum of 19 credits at the 4000 level or higher. 5. A maximum of 6 credits of Directed Research, Directed Study, and/or Industrial Assignment (co-op) may be counted toward the total, and no more than 4 credits of Directed Study may be counted toward the total.

**Custom Sub-Plan**

In rare instances, students may work with the director of undergraduate studies to create a customized sub-plan for their area of interest consistent with the requirements. Then, students must follow the department’s approval process before registering for their coursework.

Take 0 or more course(s) totaling 0 or more credit(s) from the following:

**Integrated B.Bm.E./M.S. Program**

This sub-plan is optional and does not fulfill the sub-plan requirement for this program.

The Department of Biomedical Engineering offers an Integrated Bachelors and Masters Degree program. Students accepted to the integrated program will be guaranteed admission to the Biomedical Engineering MS upon completed of the undergraduate degree.

Eligible applicants to the BME Integrated Degree Program (IDP) must have completed all required sophomore- and junior-level coursework (BMEn 2101, 2401, 2501, 3011/3015, 3111/3115, 3211/3215, 3311/3315, and 3411/3415). Students who have not yet completed these courses or their approved equivalents cannot be considered for the program.

Admission to the BME IDP is based solely on the BMEn GPA of the required courses listed above. Applicants with a BMEn GPA of 3.6 or higher are guaranteed admission. Applicants with a lower GPA will be considered on a space-available basis.

Full application instructions and deadlines can be found at https://cse.umn.edu/bme/how-apply-integrated-bachelors-masters.

The BME IDP requires completion of 124 credits to fulfill the undergraduate B.Bm.E. requirements, plus and additional 30 credits for the M.S. degree. Credits cannot be shared between the two degrees or counted simultaneously toward both the B.Bm.E. and the M.S.

Students take additional coursework during the integrated senior year - on top of their required B.Bm.E. courses - to apply toward the M.S. degree. Up to 16 of these credits completed during the senior may be transferred to the graduate program.

See https://cse.umn.edu/bme/courses for course lists that satisfy the M.S. degree requirements.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses in this sub-plan by that time cannot be updated at a later time; and, therefore will not be eligible for use towards the Master's degree.
Twin Cities Campus
Bioproducts and Biosystems Engineering B.B.E.

Bioproducts and Biosystems Engineering
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 125
- Required credits within the major: 109
- Degree: Bachelor of Bioproducts and Biosystems Engineering

The bioproducts and biosystems engineering curriculum provides a broad fundamental scientific and engineering background to harness the molecular building blocks of renewable resources for sustainable utilization, to design and develop biological systems, and to help improve the environment by developing solutions for environmental and natural resource issues affecting soil, water, and air. The curriculum offers three areas of specialization: bioproducts engineering, food engineering, and environmental and ecological engineering.

The program produces graduates who
- Have a broad fundamental engineering background, including mathematics, physical science, biological science, and engineering science and design;
- Serve the engineering needs of clientele in the areas of bioproducts, bioprocessing and food, and environment and ecology;
- Are successfully employed in engineering jobs in industry, consulting, government, or academia;
- Are engaged in professional development and lifelong learning.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 11 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics

Calculus I
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1272 - Calculus II (4.0 cr)
- MATH 1372 - CSE Calculus II (4.0 cr)
- MATH 1572H - Honors Calculus II (4.0 cr)

Linear Algebra & Differential Equations OR Multivariable Calculus
Both linear algebra and differential equations and multivariable calculus are required to graduate from the program. Only one is required for admission to the program.

Linear Algebra & Differential Equations
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- MATH 2573H - Honors Calculus III (4.0 cr)

or Multivariable Calculus
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- MATH 2574H - Honors Calculus IV (4.0 cr)

Biological and Physical Sciences
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Additional Requirements
BBE 2001 - Mechanics and Structural Design (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience. At least 30 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Common Core
BBE 1001 - Bioproducts and Biosystems Engineering Orientation (1.0 cr)
BBE 2003 - Computer Applications in Bioproducts and Biosystems Engineering (3.0 cr)
BBE 3002 - Introduction to Engineering Design (3.0 cr)
BBE 3012 - Transport in Biological Processes I (4.0 cr)
BBE 3013 - Engineering Principles of Molecular and Cellular Processes (3.0 cr)
BBE 3033 - Material and Energy Balances in Biological Systems (3.0 cr)
BBE 3043 - Biological and Environmental Thermodynamics (3.0 cr)
BBE 4013 - Transport in Biological Processes II (3.0 cr)
BBE 4023W - Process Control and Instrumentation [WI] (3.0 cr)
BBE 4303 - Introduction to Bio-based Materials Science (3.0 cr)
BBE 4502W - BBE Capstone Design [WI] (4.0 cr)

Linear Algebra & Differential Equations OR Multivariable Calculus
Students must complete both linear algebra and differential equations and multivariable calculus to graduate from this program. One of these courses must be taken prior to enrollment in the program.

Linear Algebra & Differential Equations
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or Multivariable Calculus
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• BBE 4023W - Process Control and Instrumentation [WI] (3.0 cr)
• BBE 4502W - BBE Capstone Design [WI] (4.0 cr)
• SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
• SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)

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Program Sub-plans
Students are required to complete one of the following sub-plans.

Bioproducts Engineering

Chemistry

CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)

Emphasis Courses
BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
BBE 4401 - Bioproducts Separation and Purification Processes (3.0 cr)
BBE 4402 - Bio-based Products Engineering Lab II (2.0 cr)
BBE 4403 - Bio-based Products Engineering Lab I (2.0 cr)
BBE 4713 - Biological Process Engineering (3.0 cr)
BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)

Emphasis Electives
Take 6 or more credit(s) from the following:
Take 3 or more credit(s) from the following:
  • BBE 4404 - Biopolymers and Biocomposites Engineering (3.0 cr)
  • BBE 4723 - Food Process Engineering (3.0 cr)
  • BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
  • BBE 4753 - Air Quality and Pollution Control Engineering (3.0 cr)
  • CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
  • IE 5513 - Engineering Safety (4.0 cr)

Take 0 or more credit(s) from the following:
  • BBE 4302 - Biodegradation of Bioproducts (3.0 cr)
  • BBE 4305 - Pulp and Paper Technology (3.0 cr)
  • BBE 5093 - Directed Study (1.0 - 4.0 cr)
  • SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
  • IE 5541 - Project Management (4.0 cr)

Technical Electives
Take 7 or more credit(s) from the following:
  • BBE 3396 - Industry Assignment (1.0 cr)
  • BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
  • BBE 4900 - Intern Reports (2.0 cr)
  • BIOC 3021 - Biochemistry (3.0 cr)
  • CHEM 2302 - Organic Chemistry II (3.0 cr)
  • CHEM 2311 - Organic Lab (4.0 cr)
  • CHEM 4221 - Introduction to Polymer Chemistry (3.0 cr)
  • CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
  • CHEM 4601 - Green Chemistry [ENV] (3.0 cr)
  • IE 5551 - Production Planning and Inventory Control (4.0 cr)
  • MATS 3801 - Structural Characterization Lab (4.0 cr)
  • ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)
  • STAT 5021 - Statistical Analysis (4.0 cr)
  • CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
  • CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
  • MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
  • CHEM 4214 - Polymers (3.0 cr)
  • CHEM 4214 - Polymers (3.0 cr)
  • MATS 4214 - Polymers (3.0 cr)
  • MATS 4214 - Polymers (3.0 cr)

Food Engineering

Emphasis Courses
BBE 4401 - Bioproducts Separation and Purification Processes (3.0 cr)
BBE 4402 - Bio-based Products Engineering Lab II (2.0 cr)
BBE 4713 - Biological Process Engineering (3.0 cr)
BBE 4723 - Food Process Engineering (3.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
VBS 2032 - General Microbiology With Laboratory (5.0 cr)

Emphasis Electives
Take 2 or more course(s) from the following:
- BBE 4404 - Biopolymers and Biocomposites Engineering (3.0 cr)
- BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
- BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
- BBE 4753 - Air Quality and Pollution Control Engineering (3.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)
- IE 5541 - Project Management (4.0 cr)

Technical Electives
A single course may only fulfill one major requirement. A course taken as an Emphasis Elective may not also count toward the Technical Electives requirement.
Take 8 or more credit(s) from the following:
- BBE 3396 - Industry Assignment (1.0 cr)
- BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
- BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
- BBE 4404 - Biopolymers and Biocomposites Engineering (3.0 cr)
- BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
- BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
- BBE 4900 - Intern Reports (2.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
- FSCN 3102 - Introduction to Food Science (3.0 cr)
- FSCN 4112 - Food Chemistry and Functional Foods (3.0 cr)
- FSCN 4121 - Food Microbiology (3.0 cr)
- FSCN 4332 - Food Processing Operations (3.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)
- IE 5541 - Project Management (4.0 cr)
- STAT 5021 - Statistical Analysis (4.0 cr)

Environmental and Ecological Engineering

Biochemistry
- BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
  or BIOC 3021 - Biochemistry (3.0 cr)
  or CHEM 2301 - Organic Chemistry I (3.0 cr)

Emphasis Courses
- BBE 3023 - Ecological Engineering Principles (3.0 cr)
- BBE 4523 - Ecological Engineering Design (3.0 cr)
- BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
- BBE 4535 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
- BBE 5513 - Watershed Engineering (3.0 cr)

Emphasis Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- BBE 4753 - Air Quality and Pollution Control Engineering (3.0 cr)
- CEGE 3202 - Surveying & Mapping (2.0 cr)
- CEGE 3402 - Civil Engineering Materials (3.0 cr)
- CEGE 4351 - Groundwater Mechanics (3.0 cr)
- CEGE 4352 - Groundwater Modeling (3.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
- CEGE 4511 - Hydraulic Structures (3.0 cr)
- CEGE 4512 - Open Channel Hydraulics (4.0 cr)
- CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
- CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
- CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)

Maximum of one if selected
- CEGE 4101W - Project Management and Engineering Economics [WI] (3.0 cr)
  or IE 5541 - Project Management (4.0 cr)

Technical Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
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Required Courses
BBE 8001 - Seminar I (1.0 cr)
BBE 8002 - Seminar II (1.0 cr)
BBE 8013 - Parameter Estimation in Biosystems and Agricultural Engineering (3.0 cr)
Twin Cities Campus
Chemical Engineering B.Ch.E.
Chemical Engineering & Materials Science
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 122
- Required credits within the major: 102 to 103
- Degree: Bachelor of Chemical Engineering

Chemical engineering deals with operations such as materials handling, mixing, fluid flow and metering, extrusion, coating, heat exchange, filtration, drying, evaporation, distillation, absorption, extraction, ion exchange, combustion, catalysis, and processing in chemical and biochemical reactors.

Because many industries are based on some chemical or physical transformation of matter, chemical engineers are much in demand. They may work in the manufacture of inorganic products (fertilizers, paints, ceramics, electronic materials); in the manufacture of organic products (polymers, films, papers, petrochemicals); in the manufacture of batteries and fuel cells; in the processing of minerals and materials; in food processing and fermentation; or in the production of antibiotics and biochemical products.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 11 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Students interested in chemical engineering are encouraged to take CHEN/MATS 1001 their freshman year.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1272 - Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Sciences
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Additional Lower Division Chemistry
CHEM 2301 - Organic Chemistry I (3.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Physics
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Chemical Engineering Lower Division
CHEN 2001 - Material and Energy Balances (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science & Engineering must complete CSE 1001: First-Year Experience.

At least 24 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Additional Mathematics
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

Major Courses
CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)
or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)
CHEM 2311 - Organic Lab (4.0 cr)
or CHEM 2312H - Honors Organic Lab (5.0 cr)

Analytical Chemistry
CHEM 2121 - Process Analytical Chemistry (3.0 cr)

Chemical Engineering Core Courses
CHEN 3005 - Transport Phenomena: Momentum and Heat (4.0 cr)
CHEN 3006 - Mass Transport and Separation Processes (4.0 cr)
CHEN 3101 - Chemical Engineering Thermodynamics (4.0 cr)
CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)
CHEN 3201 - Numerical methods in ChEn applications (3.0 cr)
CHEN 3401W - Junior Chemical Engineering Lab [WI] (2.0 cr)
CHEN 3701 - Introduction to Biomolecular Engineering (3.0 cr)
CHEN 4401W - Senior Chemical Engineering Lab [WI] (4.0 cr)
CHEN 4501W - Chemical Engineering Design [WI] (4.0 cr)
CHEN 4601 - Process Control (3.0 cr)
MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)

Technical Electives
Students must take four courses, for a total of at least 12 credits in the technical elective requirement. One course must be an engineering course. All technical electives must be taken A-F.

CHEN 4214, Polymers, is highly recommended.
Take 4 or more course(s) totaling 12 or more credit(s) from the following:

Upper Division Engineering Courses
Take 1 - 4 course(s) from the following:
• BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
• BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
• BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
• BBE 4303 - Introduction to Bio-based Materials Science (3.0 cr)
• BBE 4305 - Pulp and Paper Technology (3.0 cr)
• BBE 4404 - Biopolymers and Biocomposites Engineering (3.0 cr)
• BBE 4713 - Biological Process Engineering (3.0 cr)
• BBE 4723 - Food Process Engineering (3.0 cr)
• BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
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<td>BBE 5305</td>
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<tr>
<td>BMEN 5001</td>
<td>Advanced Biomaterials</td>
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<td>BMEN 5041</td>
<td>Tissue Engineering</td>
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<td>BMEN 5151</td>
<td>Introduction to BioMEMS and Medical Microdevices</td>
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<tr>
<td>BMEN 5501</td>
<td>Biology for Biomedical Engineers</td>
<td>3.0 cr</td>
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<tr>
<td>CEGE 4502</td>
<td>Water and Wastewater Treatment</td>
<td>3.0 cr</td>
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<td>Solids and Hazardous Wastes</td>
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<td>CHEN 4701</td>
<td>Applied Math</td>
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<td>CHEN 4702</td>
<td>Advanced Undergraduate Rheology</td>
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<td>CHEN 4704</td>
<td>Advanced Undergraduate Physical Rate Processes: I: Transport</td>
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<td>CHEN 4707</td>
<td>Advanced Undergraduate Statistical Thermodynamics and Kinetics</td>
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<td>CHEN 4708</td>
<td>Advanced Undergraduate Chemical Rate Processes: Analysis of Chemical Reactors</td>
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<td>CHEN 5531</td>
<td>Electrochemical Engineering and Renewable Energy</td>
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<td>Biochemical Engineering</td>
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<td>CHEN 5771</td>
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<td>Signals and Systems</td>
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<tr>
<td>EE 3161</td>
<td>Semiconductor Devices</td>
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<td>EE 4231</td>
<td>Linear Control Systems: Designed by Input/Output Methods</td>
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<tr>
<td>EE 4363</td>
<td>Computer Architecture and Machining Organization</td>
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<tr>
<td>EE 5171</td>
<td>Microelectronic Fabrication</td>
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<tr>
<td>EE 5173</td>
<td>Basic Microelectronics Laboratory</td>
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<td>EE 5364</td>
<td>Advanced Computer Architecture</td>
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<tr>
<td>EE 5393</td>
<td>Circuits, Computation, and Biology</td>
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<tr>
<td>EE 5653</td>
<td>Physical Principles of Magnetic Materials</td>
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<td>EE 5655</td>
<td>Magnetic Recording</td>
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<tr>
<td>IE 3521</td>
<td>Statistics, Quality, and Reliability</td>
<td>4.0 cr</td>
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<td>IE 5441</td>
<td>Financial Decision Making</td>
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<tr>
<td>IE 5513</td>
<td>Engineering Safety</td>
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<tr>
<td>IE 5522</td>
<td>Quality Engineering and Reliability</td>
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<td>IE 5541</td>
<td>Project Management</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>IE 5551</td>
<td>Production Planning and Inventory Control</td>
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<tr>
<td>MATS 3012</td>
<td>Metals and Alloys</td>
<td>3.0 cr</td>
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<tr>
<td>MATS 3013</td>
<td>Electrical and Magnetic Properties of Materials</td>
<td>3.0 cr</td>
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<tr>
<td>MATS 4212</td>
<td>Ceramics</td>
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<td>MATS 4214</td>
<td>Polymers</td>
<td>3.0 cr</td>
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<tr>
<td>MATS 4301W</td>
<td>Materials Processing [WI]</td>
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<tr>
<td>MATS 5517</td>
<td>Microscopy of Materials</td>
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<td>MATS 5531</td>
<td>Electrochemical Engineering</td>
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<tr>
<td>ME 4431W</td>
<td>Energy Conversion Systems Laboratory [WI]</td>
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<tr>
<td>ME 5113</td>
<td>Aerosol/Particle Engineering</td>
<td>4.0 cr</td>
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<tr>
<td>ME 5223</td>
<td>Materials in Design</td>
<td>4.0 cr</td>
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<tr>
<td>ME 5446</td>
<td>Introduction to Combustion</td>
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</table>

**Advanced Biomedical Transport Processes**

- CHEN 5753 - Advanced Biomedical Transport Processes (3.0 cr)
- BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
- CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
- CHEN 4223W - Polymer Laboratory [WI] (2.0 cr)
- MATS 4223W - Polymer Laboratory [WI] (2.0 cr)

**Additional Technical Electives**

CHEN 4594/CHEN 4594H may count for up to two credits (one course) with prior approval of the Director of Undergraduate Studies and the faculty research advisor.

Take 0 - 3 course(s) from the following:

- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
- BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
- BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>BIOC 5527</td>
<td>Introduction to Modern Structural Biology</td>
<td>4.0 cr</td>
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<tr>
<td>BIOL 2005</td>
<td>Animal Diversity Laboratory</td>
<td>2.0 cr</td>
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<tr>
<td>BIOL 3211</td>
<td>Physiology of Humans and Other Animals</td>
<td>3.0 cr</td>
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<tr>
<td>BIOL 4003</td>
<td>Genetics</td>
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<tr>
<td>BIOL 4004</td>
<td>Cell Biology</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4011</td>
<td>Mechanisms of Chemical Reactions</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>CHEM 4021</td>
<td>Computational Chemistry</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4066</td>
<td>Chemistry of Industry</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4201</td>
<td>Materials Chemistry</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4301</td>
<td>Applied Surface and Colloid Science</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4311W</td>
<td>Advanced Organic Chemistry Lab [WI]</td>
<td>4.0 cr</td>
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<tr>
<td>CHEM 4321</td>
<td>Organic Synthesis</td>
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<td>CHEM 4322</td>
<td>Advanced Organic Chemistry</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4411</td>
<td>Introduction to Chemical Biology</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4502</td>
<td>Introduction to Quantum Mechanics and Spectroscopy</td>
<td>3.0 cr</td>
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<td>3.0 cr</td>
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<tr>
<td>CHEM 4601</td>
<td>Green Chemistry [ENV]</td>
<td>3.0 cr</td>
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<td>CHEM 4701</td>
<td>Inorganic Chemistry</td>
<td>3.0 cr</td>
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<tr>
<td>CHEM 4711W</td>
<td>Advanced Inorganic Chemistry Lab [WI]</td>
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<tr>
<td>CHEM 4725</td>
<td>Organometallic Chemistry</td>
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<td>CHEM 4745</td>
<td>Advanced Inorganic Chemistry</td>
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<td>CHEM 5210</td>
<td>Materials Characterization</td>
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<td>CHEN 4594H</td>
<td>Directed Research - Honors</td>
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<td>Computational Aspects of Matrix Theory</td>
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<td>CSCI 4561</td>
<td>Introduction to Parallel Computing: Architectures, Algorithms, and Programming</td>
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<td>FINA 3001</td>
<td>Finance Fundamentals</td>
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<td>FSCN 4112</td>
<td>Food Chemistry and Functional Foods</td>
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<td>FSCN 4121</td>
<td>Food Microbiology</td>
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<td>FSCN 4122</td>
<td>Food Fermentations and Biotechnology</td>
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<td>FSCN 4311</td>
<td>Chemical Reactions in Food Systems</td>
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<td>FSCN 4332</td>
<td>Food Processing Operations</td>
<td>3.0 cr</td>
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<td>FSCN 5461</td>
<td>Food Packaging</td>
<td>2.0 cr</td>
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<td>Sequences, Series, and Foundations</td>
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<td>MATH 3283W</td>
<td>Sequences, Series, and Foundations: Writing Intensive [WI]</td>
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<td>MATH 4065</td>
<td>Theory of Interest</td>
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<td>MATH 4242</td>
<td>Applied Linear Algebra</td>
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<td>MATH 4428</td>
<td>Mathematical Modeling</td>
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<td>MATH 4512</td>
<td>Differential Equations with Applications</td>
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<td>MATH 4567</td>
<td>Applied Fourier Analysis</td>
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<td>MATH 4603</td>
<td>Advanced Calculus I</td>
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<td>MATH 5251</td>
<td>Error-Correcting Codes, Finite Fields, Algebraic Curves</td>
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<td>MATH 5378</td>
<td>Differential Geometry</td>
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<td>MATH 5445</td>
<td>Mathematical Analysis of Biological Networks</td>
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<td>MATH 5485</td>
<td>Introduction to Numerical Methods I</td>
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<td>MATH 5486</td>
<td>Introduction To Numerical Methods II</td>
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<td>MATH 5525</td>
<td>Introduction to Ordinary Differential Equations</td>
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<td>MATH 5535</td>
<td>Dynamical Systems and Chaos</td>
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<td>MATH 5587</td>
<td>Elementary Partial Differential Equations I</td>
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<td>MATH 5616H</td>
<td>Honors: Introduction to Analysis II</td>
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<td>MATH 5651</td>
<td>Basic Theory of Probability and Statistics</td>
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<td>ME 3041</td>
<td>Industrial Assignment I</td>
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<td>ME 4043W</td>
<td>Industrial Assignment II [WI]</td>
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<td>MGMT 4080W</td>
<td>Applied Technology Entrepreneurship [WI]</td>
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<td>MICH 3901</td>
<td>Biology of Microorganisms</td>
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<td>MICH 4131</td>
<td>Immunology</td>
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<td>MOT 4001</td>
<td>Leadership, Professionalism and Business Basics for Engineers</td>
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<td>MOT 5001</td>
<td>Technological Business Fundamentals</td>
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<td>MOT 5002</td>
<td>Creating Technological Innovation</td>
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<td>MOT 5003</td>
<td>Technological Business Planning Workshop</td>
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<td>NSCI 3101</td>
<td>Neurobiology I: Molecules, Cells, and Systems</td>
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<td>PDES 3711</td>
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<td>PDES 5711</td>
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<td>PHAR 6164</td>
<td>Biopharmaceutics</td>
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• PHAR 6224 - Pharmacogenomics: Genetic Basis for Variability in Drug Response (2.0 cr)
• PHCL 4020 - Chemotherapy: from current anticancer drugs to future cancer therapeutics (3.0 cr)
• PHSL 3061 - Principles of Physiology (4.0 cr)
• PHSL 5061 - Principles of Physiology for Biomedical Engineering (4.0 cr)
• PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
• PHYS 4511 - Introduction to Biopolymer Physics (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PUBH 6161 - Regulatory Toxicology (2.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)
• SSM 3301 - Global Water Resource Use and Sustainability [ENV] (3.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)

• Computer Programming & Algorithms
  Take 0 - 2 course(s) from the following:
  • CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  • CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  • CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
  • CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
  • CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
  • CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)

• Science, Technology, and Society Technical Electives
  Take 0 - 1 course(s) from the following:
  • APEC 5721 - Economics of Science and Technology Policy (3.0 cr)
  • CSCL 3323 - Science and Culture [AH] (3.0 cr)
  • ESPM 3601 - Sustainable Housing–Community, Environment, and Technology [TS] (3.0 cr)
  • HMED 3075 - Technology and Medicine in Modern America [HIS, TS] (3.0 cr)
  • HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
  • HSCI 3332 - Science in the Shaping of America [HIS, DSJ] (3.0 cr)
  • HSCI 3421 - Engineering Ethics [HIS, CIV] (3.0 cr)
  • HSCI 3715 - History of Modern Technology: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
  • PA 5711 - Science, Technology & Environmental Policy (3.0 cr)
  • PHIL 3602 - Science, Technology, and Society (3.0 cr)
  • SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
  • SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
  • SUST 4004 - Sustainable Communities (3.0 cr)
  • WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)

• Learning Abroad
  Take 0 - 1 course(s) from the following:
  • CEGE 4581 - Design for Sustainable Development - India [GP, TS] (3.0 cr)
  • CEGE 4583 - Design for Life: Water in Tanzania [GP, TS] (3.0 cr)
  • CEGE 5570 - Design for Sustainable Development - India (3.0 - 9.0 cr)
  • ME 4583 - Design for Life: Water in Tanzania [GP, TS] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
• CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
• CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
• CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
• CHEN 3401W - Junior Chemical Engineering Lab [WI] (2.0 cr)
• CHEN 4223W - Polymer Laboratory [WI] (2.0 cr)
• CHEN 4401W - Senior Chemical Engineering Lab [WI] (4.0 cr)
• CHEN 4501W - Chemical Engineering Design [WI] (4.0 cr)
• MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
• MATH 4301W - Materials Processing [WI] (4.0 cr)
• ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)
Twin Cities Campus
Chemistry B.S.Chem.
Chemistry
College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 68 to 75
• Degree: Bachelor of Science in Chemistry

The mission of the Department of Chemistry is to enrich the science of chemistry through the education of students from all disciplines, the training of future professional chemists, and the pursuit of knowledge.

Chemistry probes the fundamental concepts of nature and helps us understand the world around us. It deals with all substances at the molecular level: their composition, their properties, and how they are transformed into new substances. Chemistry is a central science of great importance to society. It provides a broad range of opportunities in many specialized fields, including biotechnology, polymer chemistry, environmental chemistry, materials chemistry, and medicine.

After graduating with a bachelor's degree, many chemistry majors go on to graduate or professional schools to pursue advanced degrees. Other graduates find employment in industry, education, or government.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 10 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)
MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Sciences
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1085 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

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Information current as of September 02, 2020
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 12 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Additional Math, Science, or Statistics
Students must take an additional course in math or statistics. If the student takes the honors math sequence, this requirement is automatically fulfilled.
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

Major Courses
- CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
- CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
- CHEM 4701 - Inorganic Chemistry (3.0 cr)

Analytical Chemistry
CHEM majors should take both CHEM 2101 and CHEM 2111; dual majors (CHEM/CHEN) should take CHEM 2121

CHEM Majors
- CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
- CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 cr)

CHEM/CHEN - Dual Majors
- CHEM 2121 - Process Analytical Chemistry (3.0 cr)

Organic Chemistry II
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Organic Lab
CHEM 2312H can also be used to fulfill an Advanced Chemistry Lab Elective. See your department advisor for an update to your record.
- CHEM 2311 - Organic Lab (4.0 cr)
- CHEM 2312H - Honors Organic Lab (5.0 cr)

Advanced Chemistry Lab and Lecture Electives
Take three or more labs totaling 6 or more credits and one lecture totaling 3 or more credits

Advanced Chemistry Lab Electives
Take 3 or more course(s) totaling 6 or more credit(s) from the following:
- CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
- CHEM 4111W - Modern Instrumental Methods of Chemical Analysis Lab [WI] (2.0 cr)
- CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
- CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
- CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
- CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
- CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
- MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
- CHEM 4949W - Directed Research [WI] (1.0 - 5.0 cr)
- BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
- CHEN 4401W - Senior Chemical Engineering Lab [WI] (4.0 cr)
- PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)
- MATS 3851W - Materials Properties Lab [WI] (4.0 cr)

Advanced Chemistry Lecture
Select one course for a minimum of three credits, excluding any course(s) from the Advanced Chemistry Lab Electives list or others required as part of the major requirements, in Chemistry.
- CHEM 4xxx
or CHEM 5xxx
or CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
or CHEM 4011 - Mechanisms of Chemical Reactions (3.0 cr)
or CHEM 4101 - Modern Instrumental Methods of Chemical Analysis (3.0 cr)
or CHEM 4201 - Materials Chemistry (3.0 cr)
or CHEM 4221 - Introduction to Polymer Chemistry (3.0 cr)
or CHEM 4301 - Applied Surface and Colloid Science (3.0 cr)
or CHEM 4321 - Organic Synthesis (3.0 cr)
or CHEM 4361 - Interpretation of Organic Spectra (3.0 cr)
or CHEM 4411 - Introduction to Chemical Biology (3.0 cr)
or CHEM 4715 - Physical Inorganic Chemistry (3.0 cr)
or CHEM 5245 - Introduction to Drug Design (3.0 cr)
or CHEM 4021 - Computational Chemistry (3.0 cr)
or CHEM 4066 - Chemistry of Industry (3.0 cr)
or CHEM 4322 - Advanced Organic Chemistry (3.0 cr)
or CHEM 4352 - Physical Organic Chemistry (3.0 cr)
or CHEM 4601 - Green Chemistry [ENV] (3.0 cr)
or CHEM 4735 - Bioinorganic Chemistry (3.0 cr)
or CHEM 4745 - Advanced Inorganic Chemistry (3.0 cr)
or CHEM 5210 - Materials Characterization (4.0 cr)
or CHEM 5755 - X-Ray Crystallography (4.0 cr)
or CHEM 4214 - Polymers (3.0 cr)
or POLYMER lecture - CHEM 4214 is the preferred course for BOTH CHEM and DUAL majors
    CHEN 4214 - Polymers (3.0 cr)
or MATS 4214 - Polymers (3.0 cr)

Technical Electives
Select courses from GEOG, HMED, HSCI, and PSY will also be accepted if there is a technical component to the course. Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- CHEN 2xxx
- CHEN 3xxx
- CHEN 4xxx
- CHEN 5xxx
- MATS 2xxx
- MATS 3xxx
- MATS 4xxx
- MATS 5xxx
- CSCI 2xxx
- CSCI 3xxx
- CSCI 4xxx
- CSCI 5xxx
- MATH 2xxx
- MATH 3xxx
- MATH 4xxx
- MATH 5xxx
- PHYS 2xxx
- PHYS 3xxx
- PHYS 4xxx
- PHYS 5xxx
- STAT 3xxx
- STAT 4xxx
- STAT 5xxx
- ANAT 3001 - Human Anatomy (3.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
- BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
- BIOL 4003 - Genetics (3.0 cr)
- BIOL 4004 - Cell Biology (3.0 cr)
- BBE 3013 - Engineering Principles of Molecular and Cellular Processes (3.0 cr)
- BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
- BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
- CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
- ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
- ESPM 3131 - Environmental Physics (3.0 cr)
• ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
• ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
• FSCN 3102 - Introduction to Food Science (3.0 cr)
• FSCN 4121 - Food Microbiology (3.0 cr)
• FSCN 4312W - Food Analysis [WI] (4.0 cr)
• GCD 3022 - Genetics (3.0 cr)
• GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
• GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• ESCI 2301 - Mineralogy (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• PHSL 3051 - Human Physiology (4.0 cr)
• PHSL 3061 - Principles of Physiology (4.0 cr)
• PUBH 3104 - Environmental Health Effects: Introduction to Toxicology (2.0 cr)
• PUBH 6176 - Hazardous Materials and Waste Management (2.0 cr)
• PUBH 6190 - Environmental Chemistry (3.0 cr)
• SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
• VBS 2032 - General Microbiology With Laboratory (5.0 cr)
• AEM 2011 - Statics (3.0 cr)
• AEM 2012 - Dynamics (3.0 cr)
• AEM 2021 - Statics and Dynamics (4.0 cr)
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• ANSC 3301 - Human and Animal Physiology (3.0 cr)
• CEGE 3101 - Computer Applications I (3.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)
• PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)
• ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• BBE 4305 - Pulp and Paper Technology (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements:

Take 0 - 1 course(s) from the following:
• CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
• CHEM 4111W - Modern Instrumental Methods of Chemical Analysis Lab [WI] (2.0 cr)
• CHEM 4311W - Advanced Organic Chemistry Lab [WI] (4.0 cr)
• CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
• CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
• CHEM 4711W - Advanced Inorganic Chemistry Lab [WI] (3.0 cr)
• CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
Civil Engineering B.C.E.
CSENG Civil, Envrn & Geo-Eng (CEGE)
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 125
- Required credits within the major: 108
- Degree: Bachelor of Civil Engineering

Civil engineering deals with the science and art of engineering applied to solving problems and designing systems related to infrastructure and the environment. Civil engineers analyze, design, and supervise the construction of roads, buildings, water supply systems, airports, tunnels, dams, bridges, and wastewater treatment systems. They must consider many factors in the design process including regulations and policy issues, sustainability, fabrication costs, and constructibility, expected lifetime of a project, and risk assessment of natural events and potential hazards.

Civil engineering is a broad area of engineering and has a tangible impact on the quality of life, human health, and safety. The advances that civil engineers have made in providing clean water supply systems have had a greater impact on human health and longevity than many advances in the medical field. The structures we live and work in, the roads and bridges we drive on, the clean water we drink, and wastewater treatment systems we use, are all designed by civil engineers. Major specialties within civil engineering include construction, environmental, geotechnical, municipal, structural, transportation, and water resources engineering.

Civil engineering jobs are available in both the private and public sector through consulting firms and in government agencies at the local, state, and federal levels. Employment can be found in nearly any region, from small communities and remote areas to the largest cities in the world. Graduates of the program have worked on the design of the tallest building and largest dams in the world. Civil engineering is considered to have one of the highest levels of job satisfaction of all professions. Civil engineers can enjoy a fulfilling technical career and also have opportunities for administrative and leadership positions. Many opportunities are available that allow civil engineers to spend time outdoors. The infrastructure required to sustainably maintain modern society ensures the continued demand for civil engineers.

The upper division civil engineering program requires students to take introductory courses in the major areas. In addition, students may emphasize in an area by selecting appropriate technical electives in consultation with their advisor. The infrastructure required to sustainably maintain modern society ensures the continued demand for civil engineers.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 10 courses before admission to the program.

Freshmen students are usually admitted to pre-major status before admission to this major.

It is recommended that students take CEGE 1101, but this course is not required to be admitted to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics

Calculus I
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1372 - CSE Calculus II (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- MATH 1572H - Honors Calculus II (4.0 cr)

Multivariable Calculus

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Information current as of September 02, 2020
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Science and Engineering Science

Chemical Principles I
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or Honors Chemistry I
CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Chemical Principles II
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or Honors Chemistry II
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Physics I
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Physics II
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Statics
AEM 2011 - Statics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience. At least 32 upper division credits in the major must be taken at the University of Minnesota Twin Cities Campus.

CEGE Core
CEGE 3101 - Computer Applications I (3.0 cr)
CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
CEGE 3103 - Engineering Ethics and Professional Practice (1.0 cr)
CEGE 3201 - Transportation Engineering (3.0 cr)
CEGE 3301 - Soil Mechanics I (3.0 cr)
CEGE 3401 - Linear Structural Analysis (3.0 cr)
CEGE 3402 - Civil Engineering Materials (3.0 cr)
CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
CEGE 3502 - Fluid Mechanics (4.0 cr)
CEGE 4101W - Project Management and Engineering Economics [WI] (3.0 cr)
CEGE 4102W - Capstone Design for Civil Engineering [WI] (4.0 cr)
CEGE 4301 - Soil Mechanics II (3.0 cr)
CEGE 4401 - Steel and Reinforced Concrete Design (4.0 cr)
CEGE 4501 - Hydrologic Design (4.0 cr)
CEGE 4502 - Water and Wastewater Treatment (3.0 cr)

Mathematics
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

Mechanics
AEM 3031 - Deformable Body Mechanics (3.0 cr)
Dynamics or Substitute
AEM 2012 - Dynamics (3.0 cr)
or CHEM 2301 - Organic Chemistry I (3.0 cr)
or MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

Electives

Although most civil engineers in practice need to be well versed in a number of specialty fields, some specialization (17 cr technical electives) is included in the BCE degree program, as follows:

Take 17 or more credit(s) from the following:

Civil Engineering Technical Electives

Students must take a minimum of 6 credits of 4xxx or higher electives offered by the Department of Civil, Environmental, and Geo-Engineering. All 4xxx or higher CEGE courses that are not required can be used as technical electives.

Take 6 or more credit(s) from the following:

- CEGE 4xxx
- CEGE 5xxx

Technical Electives

The remainder of the 17 credit technical elective requirement can be satisfied by taking courses listed below. All 4xxx or higher courses from the College of Science and Engineering (including CEGE) are acceptable as technical electives. Other courses not in the list can be used as technical electives with specific approval from a CEGE advisor. The CEGE Undergraduate Handbook Appendix A identifies recommended electives by area of emphasis.

Take 0 or more credit(s) from the following:

- AEM 4501 - Aerospace Structures (3.0 cr)
- AEM 4502 - Computational Structural Analysis (3.0 cr)
- AEM 4511 - Mechanics of Composite Materials (3.0 cr)
- AEM 4581 - Mechanics of Solids (3.0 cr)
- AEM 4xxx
- AEM 5501 - Continuum Mechanics (3.0 cr)
- AEM 5503 - Theory of Elasticity (3.0 cr)
- AEM 5xxx
- AST 4xxx
- AST 5xxx
- BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
- BBE 4523 - Ecological Engineering Design (3.0 cr)
- BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
- BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
- BBE 4xxx
- BBE 5xxx
- BMEN 4xxx
- BMEN 5xxx
- CEGE 1101 - Introduction to Civil, Environmental, and Geo-Engineering (1.0 cr)
- CEGE 3111 - CADD for Civil Engineers (2.0 cr)
- CEGE 3202 - Surveying & Mapping (2.0 cr)
- CEGE 3541 - Environmental Engineering Laboratory (3.0 cr)
- CEGE 4000H - Honors Research Seminar (1.0 cr)
- CEGE 4011 - Special Topics (1.0 - 4.0 cr)
- CEGE 4094H - Senior Honors Thesis (2.0 cr)
- CEGE 4121 - Computer Applications II (3.0 cr)
- CEGE 4170 - Independent Study I (1.0 - 4.0 cr)
- CEGE 4180 - Independent Study II (1.0 - 4.0 cr)
- CEGE 4190 - Engineering Co-op Assignment (2.0 - 6.0 cr)
- CEGE 4201 - Principles of Highway Design (3.0 cr)
- CEGE 4253 - Pavement Engineering and Management (3.0 cr)
- CEGE 4311 - Rock Mechanics (4.0 cr)
- CEGE 4315 - Groundwater Mechanics (3.0 cr)
- CEGE 4332 - Groundwater Modeling (3.0 cr)
- CEGE 4411 - Matrix Structural Analysis (3.0 cr)
- CEGE 4412 - Reinforced Concrete II (3.0 cr)
- CEGE 4413 - Steel Design II (3.0 cr)
- CEGE 4511 - Hydraulic Structures (3.0 cr)
- CEGE 4512 - Open Channel Hydraulics (4.0 cr)
- CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
- CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
- CEGE 4563 - Pollutant Fate and Transport: Processes and Modeling (3.0 cr)
- CEGE 4582 - Field Methods in Water Quality: Norway (3.0 cr)
- CEGE 4xxx
• CEGE 5094 - Directed Research (1.0 - 4.0 cr)
• CEGE 5180 - Special Topics (1.0 - 4.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5214 - Transportation Systems Analysis (3.0 cr)
• CEGE 5341 - Wave Methods for Nondestructive Testing (3.0 cr)
• CEGE 5342 - Introduction to Inverse Problems (3.0 cr)
• CEGE 5351 - Advanced Engineering Mathematics I (3.0 cr)
• CEGE 5411 - Applied Structural Mechanics (3.0 cr)
• CEGE 5414 - Prestressed Concrete Design (3.0 cr)
• CEGE 5415 - Masonry Structures (3.0 cr)
• CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
• CEGE 5512 - Stochastic Ecolohydrology (3.0 cr)
• CEGE 5541 - Advanced Engineering Mathematics II (3.0 cr)
• CEGE 5542 - Experimental Methods in Environmental Engineering (3.0 cr)
• CEGE 5543 - Introductory Environmental Fluid Mechanics (4.0 cr)
• CEGE 5551 - Environmental Microbiology (3.0 cr)
• CEGE 5552 - Environmental Microbiology Laboratory (1.0 cr)
• CEGE 5xxx
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 4xxx
• CHEM 5xxx
• CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)
• CHEN 4xxx
• CHEN 5xxx
• CMGT 4xxx
• CMPE 4xxx
• CMPE 5xxx
• CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• CSCI 4003 - Computer Architecture (4.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• CSCI 4xxx
• CSCI 5xxx
• EE 4xxx
• EE 5xxx
• EEB 3407 - Ecology (3.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 5601 - Limnology (3.0 cr)
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
• ESCI 4203 - Environmental Geophysics (3.0 cr)
• ESCI 4501 - Structural Geology (3.0 cr)
• ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
• ESCI 4701 - Geomorphology (4.0 cr)
• ESCI 4702 - General Hydrogeology (4.0 cr)
• ESCI 4703 - Glacial Geology (4.0 cr)
• ESCI 4801 - Geomicrobiology (3.0 cr)
• ESCI 4xxx
• ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
• ESCI 5xxx
• ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
• ESPM 4216 - Contaminant Hydrology (3.0 cr)
• ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
• ESPM 5605 - Recycling: Extending Raw Materials Supplies (3.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
• IE 4xxx
• IE 5111 - Systems Engineering I (2.0 cr)
• IE 5113 - Systems Engineering II (4.0 cr)
• IE 5531 - Engineering Optimization I (4.0 cr)
• IE 5545 - Decision Analysis (4.0 cr)
• IE 5553 - Simulation (4.0 cr)
• IE 5xxx
• LAAS 5311 - Soil Chemistry and Mineralogy (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4xxx
• MATH 4585 - Introduction to Numerical Methods I (4.0 cr)
• MATH 4586 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5553 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MAT 5xxx
• MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
• MATS 4xxx
• MATS 5xxx
• ME 3311 - Thermodynamics (3.0 cr)
• ME 4xxx
• ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• ME 5247 - Stress Analysis, Sensing, and Transducers (4.0 cr)
• ME 5248 - Vibration Engineering (4.0 cr)
• ME 5xxx
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• PA 4200 - Urban and Regional Planning (3.0 cr)
• PA 5013 - Law and Urban Land Use (1.5 cr)
• PA 5204 - Urban Spatial and Social Dynamics (3.0 cr)
• PA 5231 - Transit Planning and Management (3.0 cr)
• PHYS 4xxx
• PHYS 5xxx
• STAT 4xxx
• STAT 5021 - Statistical Analysis (4.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5xxx
• WRS 5101 - Water Policy (3.0 cr)
• CEGE 4211 - Traffic Engineering (3.0 cr)
  or CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 4416 - Sensors in Infrastructure (3.0 cr)
  or CEGE 5416 - Sensors in Infrastructure (3.0 cr)
• or BBE 4023W - Process Control and Instrumentation [WI] (3.0 cr)
• or BBE 5023 - Process Control and Instrumentation (3.0 cr)
• CEGE 4417 - Structural Engineering Design of Wood Buildings (3.0 cr)
• CEGE 5417 - Structural Engineering Design of Wood Buildings (3.0 cr)
• CEGE 4513 - Energy Conversion from Wind Hydro and Solar Resources (3.0 cr)
• CEGE 5513 - Energy Conversion from Wind, Hydro and Solar Resources (3.0 cr)
• or BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• CEGE 4581 - Design for Sustainable Development - India [GP, TS] (3.0 cr)
• CEGE 4582 - Design for Sustainable Development - Ethiopia [GP, TS] (3.0 cr)
• CEGE 4570 - Design for Sustainable Development - India (3.0 - 9.0 cr)
• CEGE 4583 - Design for Life: Water in Tanzania [GP, TS] (3.0 cr)
• ME 4583 - Design for Life: Water in Tanzania [GP, TS] (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5213 - Transit Planning and Management (3.0 cr)
• PA 5234 - Transit Planning and Management (3.0 cr)

Other Basic Science
Take any one Biological Science or ESCI course 3 credits or higher. A course taken to fulfill the Biological Sciences Liberal Education requirement will also fulfill this major requirement.

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CEGE 4101W - Project Management and Engineering Economics [WI] (3.0 cr)
Program Sub-plans

A sub-plan is not required for this program.

Civil Engineering B.C.E./Civil Engineering M.S.
The Department of Civil, Environmental, and Geo-Engineering offers an integrated Bachelors and Masters Degree program. Students accepted into the integrated program will be guaranteed admission to the Civil Engineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate program. Applicants must be enrolled in the University of Minnesota Twin Cities Civil Engineering undergraduate program. Applicants should meet a technical GPA minimum of 3.5 (as defined by the College of Science and Engineering).

Applicants must have completed at least 75 credits at the time of their application.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time and therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Most coursework applied to the graduate degree should be taken at the graduate level (i.e., 5xxx or above). No more than 9 credits of 4xxx-level technical elective credits can count towards your masters degree*. Credits cannot also be applied to the undergraduate degree (i.e., no double dipping).

Credits applied to the Civil Engineering or Geoengineering Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to the Civil Engineering Ph.D. within our department if a student applies and is admitted.

Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max): CEGE 5xxx level course that fits your interests and background or an approved graduate level elective. We recommend waiting to take CEGE 8xxx level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites, advisor approval, or instructor approval.

*Please refer to your advisor or the CEGE program coordinator (cegesps@umn.edu) for more details on which courses count towards a graduate degree.

Students in this program should graduate with their Bachelor's in Civil Engineering at end of Year 4 and graduate with their M.S. at end of year 5.

Civil Engineering B.C.E./Geoengineering M.S.
The Department of Civil, Environmental, and Geo-Engineering offers an integrated Bachelors and Masters Degree program. Students accepted into the integrated program will be guaranteed admission to the Geoengineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate program. Applicants must be enrolled in the University of Minnesota Twin Cities Civil Engineering undergraduate program. Applicants should meet a technical GPA minimum of 3.5 (as defined by the College of Science and Engineering).

Applicants must have completed at least 75 credits at the time of their application.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time and therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Most coursework applied to the graduate degree should be taken at the graduate level (i.e., 5xxx or above). No more than 9 credits of 4xxx-
level technical elective credits can count towards your masters degree*. Credits cannot also be applied to the undergraduate degree. (i.e., no double dipping).

Credits applied to the Civil Engineering or Geoengineering Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to the Civil Engineering Ph.D. within our department if a student applies and is admitted.

Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max): CEGE 5xxx level course that fits your interests and background or an approved graduate level elective. We recommend waiting to take CEGE 8xxx level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites, advisor approval, or instructor approval.

*Please refer to your advisor or the CEGE program coordinator (cegesps@umn.edu) for more details on which courses count towards a graduate degree.

Students in this program should graduate with their Bachelor's in Civil Engineering at end of Year 4 and graduate with their M.S. at end of year 5.
Twin Cities Campus
Computer Engineering B.Comp.E.
Electrical and Computer Engineering
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 124
- Required credits within the major: 104
- Degree: Bachelor of Computer Engineering

The mission of the computer engineering program is to educate students in core topics, as well as in a broad set of specialties of computer engineering; to impart students with professional attributes that characterize a well-schooled engineer and citizen; and to provide students with opportunities for research experience in one of the leading computer engineering centers of scholarship.

The field of computer engineering resulted from the tremendous development of computers and, in particular, the evolution of microprocessors. The design process for almost every electronic system includes the specification and development of the control program for the system's microprocessor. A particular computer engineering job can be more closely related to hardware or software, to functional design or detailed design. The B.Comp.Eng. degree provides the background necessary for persons, with continuing study, to work in many computer engineering subfields. The bachelor's degree itself does not, however, provide highly specialized knowledge in any particular subfield.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Students interested in pursuing a degree in computer engineering or electrical engineering are encouraged to take EE 1001 in their first year.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1272 - Calculus II (4.0 cr)
  or MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2573H - Honors Calculus III (4.0 cr)

Physics
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Lower Division Core Courses Required for Admission to Upper Division
EE 2015 - Signals, Circuits and Electronics (4.0 cr)
EE 2301 - Introduction to Digital System Design (4.0 cr)
EE 1301 - Introduction to Computing Systems (4.0 cr)
  or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
or CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

Lower Division Required Courses
Mathematics
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 3584H - Honors Calculus IV: Advanced Placement (5.0 cr)

ECE Courses
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
- EE 2115 - Analog and Digital Electronics (4.0 cr)
- EE 2361 - Introduction to Microcontrollers (4.0 cr)
- CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
or CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Upper Division Required Courses
Computer Science Core
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- CSCI 4061 - Introduction to Operating Systems (4.0 cr)

Electrical Engineering Core
- EE 3015 - Signals and Systems (3.0 cr)
- EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
- EE 3101 - Circuits and Electronics Laboratory I (2.0 cr)
- EE 3102 - Circuits and Electronics Laboratory II (2.0 cr)
- EE 3115 - Analog Electronics (3.0 cr)
- EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
or CSCI 4203 - Computer Architecture (4.0 cr)

CompE Technical Electives
Students must complete 28 technical elective credits, with a minimum of 22 coming from EE 4xxx/5xxx or CSCI 4xxx/5xxx courses. Take 28 or more credit(s) from the following:

Department Electives
- Take 22 or more credit(s) from the following:
  - EE 4xxx
  - EE 5xxx
  - CSCI 4xxx
  - CSCI 5xxx

Senior Design Project
A senior design project is required.
- EE 4951W - Senior Design Project [WI] (4.0 cr)
or EE 4981H - Senior Honors Project I (2.0 cr)
- EE 4982V - Senior Honors Project II [WI] (2.0 cr)

Lab Courses
Two additional EE or CSCI lab courses are required. Senior honors project students only need to take one.
- Take 2 or more course(s) from the following:
  - EE 4111 - Advanced Analog Electronics Design (4.0 cr)
  - EE 4163 - Energy Conversion and Storage Laboratory (1.0 cr)
  - EE 4235 - Linear Control Systems Laboratory (1.0 cr)
  - EE 4237 - State Space Control Laboratory (1.0 cr)
  - EE 4301 - Digital Design With Programmable Logic (4.0 cr)
  - EE 4341 - Embedded System Design (4.0 cr)
  - EE 4505 - Communications Systems Laboratory (1.0 cr)

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Information current as of September 02, 2020
• EE 4703 - Electric Drives Laboratory (1.0 cr)
• EE 4722 - Power System Analysis Laboratory (1.0 cr)
• EE 4743 - Switch-Mode Power Electronics Laboratory (1.0 cr)
• EE 4930 - Special Topics in Electrical and Computer Engineering Laboratory (1.0 - 2.0 cr)
• EE 5141 - Introduction to Microsystem Technology (4.0 cr)
• EE 5173 - Basic Microelectronics Laboratory (1.0 cr)
• EE 5327 - VLSI Design Laboratory (3.0 cr)
• EE 5373 - Data Modeling Using R (1.0 cr)
• EE 5545 - Digital Signal Processing Design (3.0 cr)
• EE 5613 - RF/Microwave Circuit Design Laboratory (2.0 cr)
• EE 5622 - Physical Optics Laboratory (1.0 cr)
• EE 5657 - Physical Principles of Thin Film Technology (4.0 cr)
• EE 5707 - Electric Drives in Sustainable Energy Systems Laboratory (1.0 cr)
• EE 5811 - Biological Instrumentation (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)

• EE 5613 - RF/Microwave Circuit Design Laboratory (2.0 cr)

• EE 5622 - Physical Optics Laboratory (1.0 cr)
• EE 5657 - Physical Principles of Thin Film Technology (4.0 cr)
• EE 5707 - Electric Drives in Sustainable Energy Systems Laboratory (1.0 cr)
• EE 5811 - Biological Instrumentation (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)

Breadth and Depth Requirements (Specialty Areas)
Take one course in 4 Breadth and Depth Requirement categories below (breadth). Within one of those categories, take a total of 2 courses (depth).

Computer Architecture
Take 0 or more course(s) from the following:
• EE 4389W - Introduction to Predictive Learning [WI] (3.0 cr)
• EE 5340 - Introduction to Quantum Computing and Physical Basics of Computing (3.0 cr)
• EE 5351 - Applied Parallel Programming (3.0 cr)
• EE 5364 - Advanced Computer Architecture (3.0 cr)
• EE 5371 - Computer Systems Performance Measurement and Evaluation (3.0 cr)
• EE 5391 - Computing With Neural Networks (3.0 cr)
• EE 5393 - Circuits, Computation, and Biology (3.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)

Robotics and Embedded System Design
Take 0 or more course(s) from the following:
• EE 4231 - Linear Control Systems: Designed by Input/Output Methods (3.0 cr)
• EE 4233 - State Space Control System Design (3.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)
• EE 5340 - Introduction to Quantum Computing and Physical Basics of Computing (3.0 cr)
• EE 5351 - Computing With Neural Networks (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5525 - Machine Learning (3.0 cr)
• CSCI 5511 - Introduction to Intelligent Robotic Systems (3.0 cr)
• CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
• CSCI 5561 - Computer Vision (3.0 cr)

VLSI and CAD
Take 0 or more course(s) from the following:
• EE 4301 - Digital Design With Programmable Logic (4.0 cr)
• EE 5301 - VLSI Design Automation I (3.0 cr)
• EE 5302 - VLSI Design Automation II (3.0 cr)
• EE 5323 - VLSI Design I (3.0 cr)
• EE 5324 - VLSI Design II (3.0 cr)
• EE 5327 - VLSI Design Laboratory (3.0 cr)
• EE 5329 - VLSI Digital Signal Processing Systems (3.0 cr)
• EE 5333 - Analog Integrated Circuit Design (3.0 cr)

Networks and Communication
Take 0 or more course(s) from the following:
• EE 4501 - Communications Systems (3.0 cr)
• CSCI 4131 - Internet Programming (3.0 cr)
• CSCI 4211 - Introduction to Computer Networks (3.0 cr)
• CSCI 5117 - Developing the Interactive Web (3.0 cr)
• CSCI 5211 - Data Communications and Computer Networks (3.0 cr)
• CSCI 5221 - Foundations of Advanced Networking (3.0 cr)
• CSCI 5231 - Wireless and Sensor Networks (3.0 cr)
• CSCI 5271 - Introduction to Computer Security (3.0 cr)
• CSCI 5471 - Modern Cryptography (3.0 cr)

**Systems and Software Design**
Take 0 or more course(s) from the following:
• EE 5355 - Algorithmic Techniques for Scalable Many-core Computing (3.0 cr)
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• CSCI 5103 - Operating Systems (3.0 cr)
• CSCI 5105 - Introduction to Distributed Systems (3.0 cr)
• CSCI 5106 - Programming Languages (3.0 cr)
• CSCI 5117 - Developing the Interactive Web (3.0 cr)
• CSCI 5125 - Collaborative and Social Computing (3.0 cr)
• CSCI 5161 - Introduction to Compilers (3.0 cr)
• CSCI 5271 - Introduction to Computer Security (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5507 - Principles of Database Systems (3.0 cr)
• CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
• CSCI 5801 - Software Engineering I (3.0 cr)
• CSCI 5802 - Software Engineering II (3.0 cr)

**Computational Science**
Take 0 or more course(s) from the following:
• CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
• CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5609 - Visualization (3.0 cr)
• CSCI 5715 - From GPS and Virtual Globes to Spatial Computing (3.0 cr)

**Graphics, Virtual Reality and User Interface Design**
Take 0 or more course(s) from the following:
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
• CSCI 5507 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5611 - Animation & Planning in Games (3.0 cr)
• CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)

**Other Approved Technical Electives**
Up to 6 credits can count from the following courses, fulfilling a portion of the required 28 technical elective credits (additional electives). Excludes CSCI 4921. Additional options may be available each semester, including Learning Abroad courses and Grand Challenges courses. Consult with ECE department as needed.
Take 0 - 6 credit(s) from the following:
• AEM 2011 - Statics (3.0 cr)
• AEM 2012 - Dynamics (3.0 cr)
• AEM 2021 - Statics and Dynamics (4.0 cr)
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• AEM 4601 - Instrumentation Laboratory (3.0 cr)
• BBE 3013 - Engineering Principles of Molecular and Cellular Processes (3.0 cr)
• BIOC 3021 - Biochemistry (3.0 cr)
• BMEN 5101 - Advanced Bioelectricity and Instrumentation (3.0 cr)
• BMEN 5111 - Biomedical Ultrasound (3.0 cr)
• BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
• BMEN 5401 - Advanced Biomedical Imaging (3.0 cr)
• BMEN 5411 - Neural Engineering (3.0 cr)
• BMEN 5412 - Neuromodulation (3.0 cr)
• BMEN 5421 - Introduction to Biomedical Optics (3.0 cr)
• CEGE 3501 - Introduction to Environmental Engineering [ENVS] (3.0 cr)
• CEGE 3502 - Fluid Mechanics (4.0 cr)
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
• CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
• EE 2701 - Sustainable Electricity Supply: Renewables and Conservation [TS] (3.0 cr)
• IE 5111 - Systems Engineering I (2.0 cr)
• IE 5113 - Systems Engineering II (4.0 cr)
• IE 5441 - Financial Decision Making (4.0 cr)
• IE 5511 - Human Factors and Work Analysis (4.0 cr)
• IE 5513 - Engineering Safety (4.0 cr)
• IE 5522 - Quality Engineering and Reliability (4.0 cr)
• IE 5531 - Engineering Optimization I (4.0 cr)
• IE 5541 - Project Management (4.0 cr)
• IE 5551 - Production Planning and Inventory Control (4.0 cr)
• IE 5553 - Simulation (4.0 cr)
• INET 4021 - Dev Ops I: Network Programming (4.0 cr)
• MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
• MATS 3012 - Metals and Alloys (3.0 cr)
• MATS 3013 - Electrical and Magnetic Properties of Materials (3.0 cr)
• MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4xxx
• MATH 5xxx
• ME 3324 - Introduction to Thermal Science (3.0 cr)
• ME 3331 - Thermodynamics (3.0 cr)
• ME 3332 - Fluid Mechanics (3.0 cr)
• ME 3333 - Heat Transfer (3.0 cr)
• PHSL 3061 - Principles of Physiology (4.0 cr)
• PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
• PHYS 2311 - Modern Physics (4.0 cr)
• PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
• PHYS 2503H - Honors Physics III (4.0 cr)
• PHYS 2601 - Quantum Physics (4.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)
• GCC 3027 - Power Systems Journey: Making the Invisible Visible and Actionable [TS] (3.0 cr)
• GCC 3011 - Pathways to Renewable Energy [TS] (3.0 cr)
• GCC 5011 - Pathways to Renewable Energy [TS] (3.0 cr)
• AST 2001 - Introduction to Astrophysics (4.0 cr)
• GCC 5027 - Power Systems Journey: Making the Invisible Visible and Actionable [TS] (3.0 cr)

Students must complete EE 3041 and EE 4043W to receive co-op credit. The third course in the sequence, EE 4044, is optional. Students may take a maximum of 6 credits of co-op courses in partial fulfillment of technical elective requirements (additional electives).

Take 0 - 6 credit(s) from the following:
• EE 3041 - Industrial Assignment I (2.0 cr)
• EE 4043W - Industrial Assignment II [WI] (4.0 cr)
• EE 4044 - Industrial Assignment III (2.0 cr)

Other Business, Law, and Entrepreneurial Related Courses
Students may take a maximum of 4 credits from the following courses in partial fulfillment of technical elective requirements (additional electives).
Take 0 - 4 credit(s) from the following:
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• MOT 4001 - Leadership, Professionalism and Business Basics for Engineers (2.0 cr)

Management Minor
Students can choose to complete the management minor alongside this degree program. Up to 6 credits of the minor coursework count toward the technical electives requirement (additional electives). Students must complete the management minor to receive any credit. Only those from the following courses can be counted.
Take 0 - 6 credit(s) from the following:
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• FINA 3001 - Finance Fundamentals (3.0 cr)
• HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
• IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• **PA 3003** - Nonprofit and Public Financial Management (3.0 cr)
• **PA 4101** - Nonprofit Management and Governance (3.0 cr)
• **SCO 3001** - Supply Chain and Operations (3.0 cr)

**Other Relevant Minors**
Up to 6 credits of additional specified minor coursework taken by students may help fulfill coursework requirements and count toward the technical electives requirement (additional electives) as determined by consultation with the ECE department. These minor options may include math, physics, product design, interdisciplinary design, accounting, biochemistry and biology minors among others.

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major; students must choose one course from the following list. Some of these courses may also fulfill other major requirements, including additional writing intensive requirements. Take 0 - 1 course(s) from the following:
- **CSCI 4511W** - Introduction to Artificial Intelligence [WI] (4.0 cr)
- **CSCI 5127W** - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
- **EE 4043W** - Industrial Assignment II [WI] (4.0 cr)
- **EE 4161W** - Energy Conversion and Storage [WI] (3.0 cr)
- **EE 4389W** - Introduction to Predictive Learning [WI] (3.0 cr)
- **EE 4951W** - Senior Design Project [WI] (4.0 cr)
- **EE 4982V** - Senior Honors Project II [WI] (2.0 cr)
- **MATH 3283W** - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- **MATS 3851W** - Materials Properties Lab [WI] (4.0 cr)
- **MGMT 4080W** - Applied Technology Entrepreneurship [WI] (4.0 cr)

**Program Sub-plans**
A sub-plan is not required for this program.

**Integrated Bachelor of Computer Eng/Master of Science in Electrical and Computer Eng.**
The Department of Electrical and Computer Engineering offers an integrated Bachelors and Masters Degree program. Students accepted to the integrated program will be guaranteed admission to the Electrical and Computer Engineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam or submit Letters of Recommendation as part of their graduate application, unlike other students applying to our graduate programs.

Applicants must be enrolled University of Minnesota - Twin Cities students admitted to an Electrical Engineering or Computer Engineering undergraduate program. Applicants must meet a Technical GPA minimum of 3.4 (as defined by the College of Science & Engineering) or have at least a 3.2 GPA and additional positive factors that make them eligible.

Applicants must have completed or be taking EE 3015 and EE 3115 and at least one other 4xxx level EE or CSci course to be eligible. Depending on application materials and timing, an applicant may be asked to wait for another semester of grades before being admitted or rejected.

Full application instructions can be found at https://ece.umn.edu/combined-degree-program/.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time; and, therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Credits being applied to the Master’s in Electrical and Computer Engineering taken while the student is an undergraduate for use in the integrated program can also be applied later to an Electrical Engineering Ph.D. within our department if a student applies and is admitted. Credits cannot also be applied to the undergraduate degree (i.e., no double dipping).

**Integrated Bachelor of Computer Engineering/Master of Science in Computer Science and Eng**
The Department of Computer Science & Engineering offers an integrated Bachelors and Masters Degree program. Students accepted to the integrated program will be guaranteed admission to the Computer Science MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to
our graduate programs.

Applicants must be enrolled University of Minnesota - Twin Cities students admitted to a Computer Science or Computer Engineering undergraduate program. Applicants must meet a Technical GPA minimum of 3.5 (as defined by the College of Science & Engineering) or they must have a strong recommendation from a Computer Science and Engineering faculty member or instructor (not an ECE Faculty member).

Applicants must have at least 75 credits completed at the time of their application. Applicants must have passed with a C- or better all of the following courses:

- CSCI 1933 or 1913
- CSCI 2011
- CSCI 2021 (CSCI students) or EE 2361 (CompE students)
- CSCI 2033 or a math course containing linear algebra content
- CSCI 2041 (CSCI students only)
- CSCI 3081W (CSCI students only), CSCI 4041, and CSCI 4061 (applicants can have one of these courses in progress at the time of application)

Full application instructions can be found at cs.umn.edu/integrated

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time; and, therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Coursework applied to the graduate degree must be taken at the graduate level (i.e., 5xxx or above) Credits being applied to the Computer Science Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to a Computer Science Ph.D. within our department if a student applies and is admitted. Credits cannot also be applied to the undergraduate degree (i.e., no double dipping).

Students should consider taking the following courses/requirements to apply to their graduate degree as an undergraduate integrated program student (16 credits max):

- CSCI 8970 - Computer Science Colloquium (1 credit)
- Course to meet the Theory and Algorithms Breadth requirement (3 credits)*
- Course to meet the Architecture, Systems, & Software Breadth requirement (3 credits)*
- Course to meet the Applications Breadth requirement (3 credits)*
- CSCI 5XXX level course that fits your interests and background (3 credits) or an approved graduate level elective or graduate minor course. We recommend waiting to take CSCI 8XXX level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites.
- CSCI 5XXX level course that fits your interests and background (3 credits) or an approved graduate level elective or graduate minor course. We recommend waiting to take CSCI 8XXX level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites.

*Please refer to the Department of Computer Science & Engineering webpage for more details on which courses count for specific breadth requirements.
Twin Cities Campus
Computer Science B.S. Comp.Sc.
Computer Science and Engineering
College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 77 to 78
• Degree: Bachelor of Science in Computer Science

Computer science is concerned with the study of hardware, software, and theoretical aspects of high-speed computing devices and with the application of these devices to scientific, technological, and business problems.

A bachelor's degree gives students a basic understanding of computer science. After completing a required set of fundamental courses, students arrange their subsequent work around one of several upper division tracks within either computer science or an interdisciplinary area involving computer applications. The degree prepares students for graduate work or for various industrial, governmental, and business positions involving the use of computers.

The B.S. more upper division credits in computer science and related areas allowing the student to pursue more deeply a particular area of computer science and tailor the degree to a specific area of interest. For students who are more likely to practice in an area that is highly specialized or technical, the B.S. may provide a better background than our B.A. in Computer Science.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 5 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics Core
Calculus I
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)

Additional Math
Discrete Structures of Computer Science
CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
or CSCI 2011H - Honors Discrete Structures of Computer Science (4.0 cr)
or Acceptable Substitution Combination
Students pursuing this substitution option will need to contact the departmental advisors (csciug@umn.edu) after their grade posts for MATH 4707 so an exception can be made to count the course towards their upper division track.
MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
or MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)

Computer Science Introductory Core
Computer Science Foundation Courses
Option 1 (Preferred)
Subgroup 0
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
Subgroup 1
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
or CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)

or Option 2
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 19 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Science Core
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
Take 1 or more course(s) from the following:
• ESCI 2201 - Solid Earth Dynamics (4.0 cr)
• GCD 3022 - Genetics (3.0 cr)
• PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
• PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
• PSY 3011 - Introduction to Learning and Behavior (3.0 cr)
• Chemistry 1
  • CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
• Chemistry 1 Honors
  • CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
• Chemistry 2
  • CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• Chemistry 2 Honors
  • CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Computer Science Core
CSCI 2041 - Advanced Programming Principles (4.0 cr)
CSCI 3081W - Program Design and Development [WI] (4.0 cr)
CSCI 4041 - Algorithms and Data Structures (4.0 cr)
CSCI 4061 - Introduction to Operating Systems (4.0 cr)

Linear Algebra
CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
or MATH 2142 - Elementary Linear Algebra (4.0 cr)
or Acceptable Substitutions with MATH 4242
  Students pursuing this substitution option will need to contact the departmental advisors (csciug@umn.edu) after their grade posts for MATH 4242 so an exception can be made to count the course towards their upper division track.
  MATH 4242 - Applied Linear Algebra (4.0 cr)

Acceptable Substitutions
  • MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
  or MATH 2471 - UM Talented Youth Mathematics Program--Calculus II, Second Semester [MATH] (2.0 cr)
  or MATH 2574H - Honors Calculus IV (4.0 cr)

or Acceptable Honors Math Substitutions
  MATH 3592H - Honors Mathematics I (5.0 cr)
  MATH 3593H - Honors Mathematics II (5.0 cr)

Statistics
STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or
IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or
EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or
STAT 4101 - Theory of Statistics I (4.0 cr)
or
STAT 4102 - Theory of Statistics II (4.0 cr)
or
STAT 5101 - Theory of Statistics I (4.0 cr)
or
STAT 5102 - Theory of Statistics II (4.0 cr)
or
STAT 8101 - Theory of Statistics I (3.0 cr)
or
STAT 8102 - Theory of Statistics II (3.0 cr)
or
MATH 4653 - Elementary Probability (4.0 cr)
or
MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or
STAT 3022 - Data Analysis (4.0 cr)

Computer Architecture
CSCI 2021 - Machine Architecture and Organization (4.0 cr)
or
EE 2361 - Introduction to Microcontrollers (4.0 cr)

Computer Science Major Electives
Students are strongly encouraged to talk with an academic advisor about faculty constructed tracks suggested within the major electives to complete a specialization within computer science. Students are required to complete 23 credits. Of the 23 credits, 11 must have a CSCI designator.

Take 23 or more credit(s) from the following:

Upper Division Math Oriented Requirement
Take 1 or more course(s) from the following:
- CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
- CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
- CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
- CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
- CSCI 5471 - Modern Cryptography (3.0 cr)
- CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
- CSCI 5525 - Machine Learning (3.0 cr)
- MATH 4151 - Elementary Set Theory (3.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Advanced Calculus I (4.0 cr)
- MATH 4603 - Advanced Calculus II (4.0 cr)
- MATH 4653 - Elementary Probability (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5265H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5266H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5335 - Geometry I (4.0 cr)
- MATH 5345H - Honors: Introduction to Topology (4.0 cr)
- MATH 5378 - Differential Geometry (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
- MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
- MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
- MATH 5583 - Complex Analysis (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
- MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
- MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
- MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
- MATH 5654 - Prediction and Filtering (4.0 cr)
- MATH 5705 - Enumerative Combinatorics (4.0 cr)
- MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
- MATH 4152 - Elementary Mathematical Logic (3.0 cr)
or MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
• MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
or MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)

Computer Science Electives
Take 0 - 22 credit(s) from the following:
• AEM 4601 - Instrumentation Laboratory (3.0 cr)
• AEM 4602W - Aeromechanics Laboratory [WI] (4.0 cr)
• AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
• BIOL 5272 - Applied Biostatistics (4.0 cr)
• CHEM 4021 - Computational Chemistry (3.0 cr)
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4131 - Internet Programming (3.0 cr)
• CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 4950 - Senior Software Project (3.0 cr)
• CSCI 503 - Operating Systems (3.0 cr)
• CSCI 505 - Introduction to Distributed Systems (3.0 cr)
• CSCI 506 - Programming Languages (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5117 - Developing the Interactive Web (3.0 cr)
• CSCI 5123 - Recommender Systems (3.0 cr)
• CSCI 5125 - Collaborative and Social Computing (3.0 cr)
• CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
• CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)
• CSCI 5161 - Introduction to Compilers (3.0 cr)
• CSCI 5221 - Foundations of Advanced Networking (3.0 cr)
• CSCI 5231 - Wireless and Sensor Networks (3.0 cr)
• CSCI 5271 - Introduction to Computer Security (3.0 cr)
• CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
• CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
• CSCI 5471 - Modern Cryptography (3.0 cr)
• CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5525 - Machine Learning (3.0 cr)
• CSCI 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)
• CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
• CSCI 5561 - Computer Vision (3.0 cr)
• CSCI 5563 - Multiview 3D Geometry in Computer Vision (3.0 cr)
• CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
• CSCI 5609 - Visualization (3.0 cr)
• CSCI 5611 - Animation & Planning in Games (3.0 cr)
• CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)
• CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
• CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr)
• CSCI 5751 - Big Data Engineering and Architecture (3.0 cr)
• CSCI 5801 - Software Engineering I (3.0 cr)
• CSCI 5802 - Software Engineering II (3.0 cr)
• EE 4301 - Digital Design With Programmable Logic (4.0 cr)
• EE 4303 - Introduction to Programmable Devices Laboratory (1.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)
• EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• EE 4541 - Digital Signal Processing (3.0 cr)
• EE 5239 - Introduction to Nonlinear Optimization (3.0 cr)
• EE 5251 - Optimal Filtering and Estimation (3.0 cr)
• EE 5351 - Applied Parallel Programming (3.0 cr)
• EE 5355 - Algorithmic Techniques for Scalable Many-core Computing (3.0 cr)
• EE 5364 - Advanced Computer Architecture (3.0 cr)
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>Computer Systems Performance Measurement and Evaluation</td>
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<td>Data Management II: Distributed Systems</td>
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<td>ME 5286</td>
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<td>MICE 5035</td>
<td>Personal Microbiome Analysis</td>
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</table>

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Information current as of September 02, 2020
• PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
• STAT 3301 - Regression and Statistical Computing (4.0 cr)
• STAT 4051 - Applied Statistics I (4.0 cr)
• STAT 4052 - Introduction to Statistical Learning (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5511 - Time Series Analysis (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• STAT 5701 - Statistical Computing (3.0 cr)
• CSCI 4203 - Computer Architecture (4.0 cr)
  or EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• CSCI 4211 - Introduction to Computer Networks (3.0 cr)
  or CSCI 5211 - Data Communications and Computer Networks (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
  or CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
  or CSCI 5707 - Principles of Database Systems (3.0 cr)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
  or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)
  or EE 5364 - Advanced Computer Architecture (3.0 cr)
• MATH 4152 - Elementary Mathematical Logic (3.0 cr)
  or MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)
• MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
  or MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
  or STAT 5102 - Theory of Statistics II (4.0 cr)
• STAT 5731 - Bayesian Astrostatistics (4.0 cr)
  or AST 5731 - Bayesian Astrostatistics (4.0 cr)
• Take 0 - 3 credit(s) from the following:
  • CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
  • CSCI 5980 - Special Topics in Computer Science (1.0 - 3.0 cr)
  • CSCI 5991 - Independent Study (1.0 - 3.0 cr)
  • CSCI 5994 - Directed Research (1.0 - 3.0 cr)
• GDES and PDES course options
  Take 0 - 2 course(s) from the following:
  • GDES 4371 - Data Visualization Studio (3.0 cr)
  • GDES 5341 - Interaction Design (3.0 cr)
  • GDES 5342 - Advanced Web Design (3.0 cr)
  • GDES 5372 - Data Visualization for Interactive Platforms (3.0 cr)
  • GDES 5386 - Fundamentals of Game Design (3.0 cr)
  • PDES 5704 - Computer-Aided Design Methods (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
  • CSCI 3081W - Program Design and Development [WI] (4.0 cr)
  • CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
  • CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
  • CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
  • CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
  • CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Integrated Computer Science B.S./M.S. Program
The Department of Computer Science & Engineering offers an integrated Bachelors and Masters Degree program. Students accepted to the integrated program will be guaranteed admission to the Computer Science MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate programs.

Applicants must be enrolled University of Minnesota Twin Cities students admitted to a Computer Science or Computer Engineering undergraduate program. Applicants must meet a Technical GPA minimum of 3.5 (as defined by the College of Science & Engineering) or they must have a strong recommendation from a Computer Science and Engineering faculty member or instructor (not an ECE Faculty member). Applicants must have at least 75 credits completed at the time of their application. Applicants must have passed with a C- or better all of the following courses: CSCI 1933 or 1913, CSCI 2011, CSCI 2021 (CSCI students) or EE 2361 (CompE students) CSCI 2033 or a math course containing linear algebra content CSCI 2041 (CSCI students only) CSCI 3081W (CSCI students only), CSCI 4041, and CSCI 4061 (applicants can have one of these courses in progress at the time of application)

Full application instructions can be found at cs.umn.edu/integrated

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Coursework applied to the graduate degree must be taken at the graduate level (i.e., 5xxx or above). Credits being applied to the Computer Science Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to a Computer Science Ph.D. within our department if a student applies and is admitted. Credits cannot also be applied to the undergraduate degree (i.e., no double dipping).

Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max): CSCI 8970 - Computer Science Colloquium (1 credit) Course to meet the Theory and Algorithms Breadth requirement (3 credits)* Course to meet the Architecture, Systems, & Software Breadth requirement (3 credits)* Course to meet the Applications Breadth requirement (3 credits)* CSCI 5XXX level course that fits your interests and background (3 credits) or an approved graduate level elective or graduate minor course. We recommend waiting to take CSCI 8XXX level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites. CSCI 5XXX level course that fits your interests and background (3 credits) or an approved graduate level elective or graduate minor course. We recommend waiting to take CSCI 8XXX level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites.

Courses that will be used to fulfill Master's degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time; and, therefore will not be eligible for use towards the Master's degree.

*Please refer to the Department of Computer Science & Engineering webpage for more details on which courses count for specific breadth requirements.
Twin Cities Campus
Data Science B.S.
Computer Science and Engineering
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 94

A data scientist is a person who should be able to leverage existing data sources and create new ones as needed in order to extract meaningful information and actionable insights. These insights can be used to drive business decisions and changes intended to achieve business goals.

This is done through business domain expertise, effective communication and results interpretation, and utilization of any and all relevant statistical techniques, programming languages, software packages and libraries, data infrastructure, and so on.

The degree prepares students for work in various industrial, governmental, and business positions. Graduates will be able to:

* Conduct research on open-ended industry or organization questions
* Extract large volumes of data from both internal and external sources
* Clean and remove irrelevant data information from usable data
* Analyze data for weaknesses, trends, and/or opportunities
* Create algorithms to solve problems and build new automation tools
* Effectively communicate findings to management

Program Delivery
This program is available:

- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 5 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics Core

- Calculus I
  - MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  - MATH 1271 - Calculus I [MATH] (4.0 cr)
  - MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

- Calculus II
  - MATH 1372 - CSE Calculus II (4.0 cr)
  - MATH 1272 - Calculus II (4.0 cr)
  - MATH 1572H - Honors Calculus II (4.0 cr)

Computer Science Introductory Core

Data Science Sequences

- Preferred Data Science Sequence
  - CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  - CSCI 2081 - Introduction to Software Development (4.0 cr)

- Alternative Sequence Options
  In order to maximize course overlap, it is recommended that double majors in Computer Science and Data Science pursue one of the following sequences in place of the Data Science Sequence. CSCI 2081 cannot be used in the Computer Science programs.
  - CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  - CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
  - CSCI 3081W - Program Design and Development [WI] (4.0 cr)
  - CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
  - CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
CSCI 3081W - Program Design and Development [WI] (4.0 cr)
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
CSCI 3081W - Program Design and Development [WI] (4.0 cr)

Statistics Core
STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 33 upper-division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Science Core
Physics I
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
Second Science Options
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
ESCI 2201 - Solid Earth Dynamics (4.0 cr)
GCD 3022 - Genetics (3.0 cr)
PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
PSY 3011 - Introduction to Learning and Behavior (3.0 cr)
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Data Science Core
CSCI 4707 - Practice of Database Systems (3.0 cr)
STAT 3301 - Regression and Statistical Computing (4.0 cr)
STAT 4051 - Applied Statistics I (4.0 cr)
IE 3013 - Optimization for Machine Learning (4.0 cr)
IE 5533 - Operations Research for Data Science (3.0 cr)
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
DSCI 4093 - Data Science Senior Project Directed Study (4.0 cr)

Discrete Structures & Algorithms
CSCI 3041 - Introduction to Discrete Structures and Algorithms (4.0 cr)
In order to maximize course overlap, it is recommended that double majors in Computer Science and Data Science pursue the following sequences in place of the Data Science Sequence. CSCI 3041 cannot be used in the Computer Science programs.
CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
CSCI 4041 - Algorithms and Data Structures (4.0 cr)

Systems and Systems Programming
CSCI 3061 - Introduction to Computer Systems (4.0 cr)
In order to maximize course overlap, it is recommended that double majors in Computer Science and Data Science pursue the following sequences in place of the Data Science Sequence. CSCI 3061 cannot be used in the Computer Science programs.
CSCI 2021 - Machine Architecture and Organization (4.0 cr)
CSCI 4061 - Introduction to Operating Systems (4.0 cr)

Multivariable Calculus
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
MATH 2263 - Multivariable Calculus (4.0 cr)
MATH 2573H - Honors Calculus III (4.0 cr)
Linear Algebra
CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
or MATH 2142 - Elementary Linear Algebra (4.0 cr)
or Students who complete MATH 2243/2373/2471/2574H/3593H AND MATH 4242 qualify for a four-credit waiver in the Data Science Technical Electives area. Students will need to contact a Departmental Advisor to request this waiver after MATH 4242 is completed.
MATH 4242 - Applied Linear Algebra (4.0 cr)
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2471 - UM Talented Youth Mathematics Program--Calculus II, Second Semester [MATH] (2.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 3593H - Honors Mathematics II (5.0 cr)

Machine Learning, Data Mining, or Statistical Learning
CSCI 5521 - Introduction to Machine Learning (3.0 cr)
or CSCI 5523 - Introduction to Data Mining (3.0 cr)
or STAT 4052 - Introduction to Statistical Learning (4.0 cr)

Theory of Statistics
STAT 5102 - Theory of Statistics II (4.0 cr)

Theory of Statistics I options
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

Approved Data Science Major Technical Electives
Students can take any approved data science technical electives from the following list to satisfy the minimum 18 credits required. Unique courses from CSCI, EE, IE, Math, or STAT with titles similar to independent study, directed research, special topics, honors thesis, or senior design can be approved for use as major technical electives if related to the study of data science with Director of Undergraduate Studies approval.

Approved Data Science Major Technical Elective Options
Take 18 or more credit(s) from the following:
- CSCI 4131 - Internet Programming (3.0 cr)
- CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
- CSCI 5105 - Introduction to Distributed Systems (3.0 cr)
- CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
- CSCI 5117 - Developing the Interactive Web (3.0 cr)
- CSCI 5123 - Recommender Systems (3.0 cr)
- CSCI 5125 - Collaborative and Social Computing (3.0 cr)
- CSCI 5271 - Introduction to Computer Security (3.0 cr)
- CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
- CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
- CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
- CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
- CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
- CSCI 5512 - Artificial Intelligence II (3.0 cr)
- CSCI 5525 - Machine Learning (3.0 cr)
- CSCI 5561 - Computer Vision (3.0 cr)
- CSCI 5609 - Visualization (3.0 cr)
- CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
- CSCI 5715 - From GPS, Google Maps, and Uber to Spatial Data Science (3.0 cr)
- CSCI 5751 - Big Data Engineering and Architecture (3.0 cr)
- CSCI 5801 - Software Engineering I (3.0 cr)
- CSCI 5802 - Software Engineering II (3.0 cr)
- EE 4541 - Digital Signal Processing (3.0 cr)
- EE 5239 - Introduction to Nonlinear Optimization (3.0 cr)
- EE 5251 - Optimal Filtering and Estimation (3.0 cr)
- EE 5351 - Applied Parallel Programming (3.0 cr)
- EE 5355 - Algorithmic Techniques for Scalable Many-core Computing (3.0 cr)
- IE 3011 - Optimization I (4.0 cr)
- IE 3012 - Optimization II (4.0 cr)
- IE 5111 - Systems Engineering I (2.0 cr)
- IE 5113 - Systems Engineering II (4.0 cr)
- IE 5531 - Engineering Optimization I (4.0 cr)
- IE 5541 - Project Management (4.0 cr)
- IE 5545 - Decision Analysis (4.0 cr)
- IE 5553 - Simulation (4.0 cr)
- IE 5561 - Analytics and Data-Driven Decision Making (4.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5511 - Time Series Analysis (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• STAT 5931 - Topics in Statistics (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
  or CSCI 5511 - Artificial Intelligence I (3.0 cr)

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

**Upper Division Writing Intensive within the major**

Take 0 - 1 course(s) from the following:

• CSCI 4271W - Development of Secure Software Systems [WI] (4.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Earth Sciences B.S. Earth Sciences
Department of Earth Sciences
College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 93
• This program requires summer terms.
• NA
• Degree: Bachelor of Science in Earth Sciences

Earth sciences is the study of the composition, structure, and history of the Earth and of the processes that operate on and within it, with emphasis on the crust, oceans, and atmosphere. The department's programs emphasize applications of physics, chemistry, and biology to understanding the Earth.

Earth scientists are employed in a wide range of fields, including exploration for and development of natural resources (hydrocarbons, minerals, groundwater); environmental science; urban planning; education; and oceanography. Potential employers include the oil, gas, and minerals industries; environmental consultants; federal and private research institutions; universities; schools; and government agencies. An advanced degree is usually required for a career in research or teaching.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Students interested in the earth sciences as a major may want to consider taking ESCI 1001 or other ESCI 1xxx course, which can be counted as an elective.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
Calculus I
Math 1371 - CSE Calculus I [MATH] (4.0 cr)
or Math 1271 - Calculus I [MATH] (4.0 cr)
or Math 1571H - Honors Calculus I [MATH] (4.0 cr)
Calculus II
Math 1372 - CSE Calculus II (4.0 cr)
or Math 1272 - Calculus II (4.0 cr)
or Math 1572H - Honors Calculus II (4.0 cr)

Chemistry
Chemistry I Lecture and Lab
Chemistry I
Chem 1051 - Chemical Principles I [PHYS] (3.0 cr)
Chem 1055 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or Chemistry I Honors
Chem 1071H - Honors Chemistry I [PHYS] (3.0 cr)
Chem 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
Chemistry II Lecture and Lab
Chemistry II
Chem 1062 - Chemical Principles II [PHYS] (3.0 cr)
Chem 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or Chemistry II Honors
Chem 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1 cr)

Physics
Physics I
Physics I
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
Physics II
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Earth Sciences
ESCI 2201 - Solid Earth Dynamics (4.0 cr)
ESCI 2301 - Mineralogy (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience. At least 22 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Mathematics
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

Major Courses
Major core courses required for all focus groups.
ESCI 2202 - Earth History (4.0 cr)
ESCI 2203 - Earth Surface Dynamics (4.0 cr)
ESCI 3202 - Fluid Earth Dynamics (4.0 cr)
ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
ESCI 3891 - Field Methods (2.0 cr)

Fieldwork
Take introductory field geology (ESCI 3911) and choose one advanced field course from advanced field geology (ESCI 4911) or field hydrogeology (ESCI 4971W).
ESCI 3911 - Introductory Field Geology (4.0 cr)
ESCI 4911 - Advanced Field Geology (4.0 cr)
or ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)

Technical Electives
Take 7 credits of additional elective courses in physical and natural sciences or mathematics. Students should choose elective courses in consultation with the ESci director of undergraduate studies. Though not an exhaustive list, students frequently select courses listed below to fulfill this requirement.
Take 7 or more credit(s) from the following:
• AST 1001 - Exploring the Universe [PHYS, ENV] (4.0 cr)
• AST 2001 - Introduction to Astrophysics (4.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
• SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
• PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
  or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)

**Upper Division Requirements**

25 additional upper division ESci credits, including ESci 2302, are required to complete the major. The six focus groups below are suggested courses that students may consider taking if they are interested in a particular sub-discipline of Earth and Environmental Sciences. These are only suggestions, and students may pick and choose courses from different focus groups as their interests evolve.

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)

**Earth Sciences Focus Groups**

**Geology**

ESCI 2302 - Petrology (3.0 cr)
ESCI 4501 - Structural Geology (3.0 cr)
ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
ESCI 4702 - General Hydrogeology (4.0 cr)
ESCI 4701 - Geomorphology (4.0 cr)
  or ESI 4703 - Glacial Geology (4.0 cr)

9-10 additional ESI credits with at least 7 credits at 4xxx or 5xxx levels.

-OR-

**Geophysics**

ESCI 2302 - Petrology (3.0 cr)
ESCI 4211 - Solid Earth Geophysics I (3.0 cr)
ESCI 4501 - Structural Geology (3.0 cr)
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
  or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)

Choice of two from

Take 2 or more course(s) from the following:
• ESI 4203 - Environmental Geophysics (3.0 cr)
• ESI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
• ESI 4212 - Solid Earth Geophysics II (3.0 cr)
• ESI 5203 - Mineral and Rock Physics (3.0 cr)

Take 3 or more credit(s) from the following:
• ESI 4xxx
• ESI 5xxx

-OR-

**Biogeoscience**

ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
ESCI 4801 - Geomicrobiology (3.0 cr)
ESCI 5302 - Isotope Geology (3.0 cr)
ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
  or ESI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)

14 additional ESI credits at least 9 at 4xxx or 5xxx

-OR-

**Hydrogeology**

ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
ESCI 4702 - General Hydrogeology (4.0 cr)
ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
or ESCI 4701 - Geomorphology (4.0 cr)
or ESCI 4703 - Glacial Geology (4.0 cr)
15-16 additional ESCI credits with at least 9 credits at 4xxx or 5xxx.

-OR-

**Geochemistry**

ESCI 2302 - Petrology (3.0 cr)
ESCI 4501 - Structural Geology (3.0 cr)
ESCI 4801 - Geomicrobiology (3.0 cr)
ESCI 5302 - Isotope Geology (3.0 cr)
ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
or ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
11 additional ESCI credits with at least 9 credits at 4xxx or 5xxx.

-OR-

**Environmental Geology**

ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
ESCI 4702 - General Hydrogeology (4.0 cr)
ESCI 4703 - Glacial Geology (4.0 cr)
or ESCI 4801 - Geomicrobiology (3.0 cr)
12-13 additional ESCI credits with at least 9 credits at 4xxx or 5xxx.
Twin Cities Campus
Ecological Engineering Minor
Bioproducts and Biosystems Engineering
College of Science and Engineering

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 20
• Twin Cities only

Ecological engineering integrates traditional engineering concepts with ecological principles such as resiliency, adaptation, and community dynamics. The ecological engineering minor prepares students to design sustainable systems integrating human activities with the natural environment, including watershed management and enhancement; waste treatment systems; phyto remediation and bioremediation; industrial ecology; constructed and restored wetlands; mitigation of non-point source contamination; and increase of ground water recharge through "low impact" design and other methods.

The minor, offered by faculty in the Department of Bioproducts and Biosystems Engineering and administered through the College of Science and Engineering, involves courses in bioproducts and biosystems engineering; civil, environmental and geo-engineering; ecology, evolution and behavior; environmental sciences, policy and management; forest resources; and earth sciences.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Core Group Courses
Students must take 9 or more credits from the list of courses selecting at least one course in each of the three core areas of ecological sciences, hydrologic sciences, and ecological engineering design. Acceptable courses in each of the core areas are shown below.

Ecological Sciences
At least one course from this subgroup
EEB 3807 - Ecology (4.0 cr)
or EEB 3001 - Ecology and Society [ENV] (3.0 cr)
or FNRM 3104 - Forest Ecology (4.0 cr)

Hydrologic Sciences
At least one course from this subgroup
CEGE 4501 - Hydrologic Design (4.0 cr)
or BBE 5513 - Watershed Engineering (3.0 cr)
or FNRM 3114 - Hydrology and Watershed Management (3.0 cr)

Ecological Engineering Design
BBE 4523 - Ecological Engineering Design (3.0 cr)

Additional Courses
In addition to the core courses, the students must take 9 or more credits from the following list of courses.
BBE 3023 - Ecological Engineering Principles (3.0 cr)
or BBE 3043 - Biological and Environmental Thermodynamics (3.0 cr)
or BBE 4013 - Transport in Biological Processes II (3.0 cr)
or BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
or BBE 4535 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
or BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
or CEGE 3301 - Soil Mechanics I (3.0 cr)
or CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
or CEGE 4351 - Groundwater Mechanics (3.0 cr)
or CEGE 4352 - Groundwater Modeling (3.0 cr)
or CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
or CEGE 4512 - Open Channel Hydraulics (4.0 cr)
or CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
or CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
or CEGE 5541 - Environmental Water Chemistry (3.0 cr)
or EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
or EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
or EEB 4611 - Biogeochemical Processes (3.0 cr)
or EEB 5601 - Limnology (3.0 cr)
or ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
or ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
or ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
or ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
or ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
or ESPM 4216 - Contaminant Hydrology (3.0 cr)
or FNRM 3204 - Landscape Ecology and Management (3.0 cr)
or FNRM 5153 - Forest Hydrology & Watershed Biogeochemistry (3.0 cr)
or ESCI 3005 - Earth Resources (3.0 cr)
or SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
Twin Cities Campus
Electrical Engineering B.E.E.
Electrical and Computer Engineering
College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 124
• Required credits within the major: 105
• Degree: Bachelor of Electrical Engineering

The mission of the electrical engineering program is to educate students in core topics, as well as in a broad set of specialties of electrical engineering. The program will impart students with professional attributes that characterize a well-schooled engineer and citizen and provide opportunities for research experience in one of the leading electrical engineering centers of scholarship.

Electrical engineers work in highly diverse areas such as computers, telecommunications, semiconductors, electric energy, consumer and entertainment electronics, biomedical technology, defense and aerospace systems, and automotive electronics. They design and develop components, software, and systems and work in research, management, and sales. The bachelor of electrical engineering prepares students for immediate entry into professional work, for graduate study and further specialization in engineering, for advanced work in business and management, or for study in a different direction, such as medicine.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 10 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Students interested in pursuing a degree in computer engineering or electrical engineering are encouraged to take EE 1001 in their first year.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
   or MATH 1271 - Calculus I [MATH] (4.0 cr)
MATH 1372 - CSE Calculus II (4.0 cr)
   or MATH 1272 - Calculus II (4.0 cr)
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
   or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
   or Honors Curriculum
   For those students pursuing Latin Honors
   MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
   MATH 1572H - Honors Calculus II (4.0 cr)
   MATH 2573H - Honors Calculus III (4.0 cr)

Chemistry and Physics
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
   or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
   or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
   or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
   or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
Computer Science
EE 1301 - Introduction to Computing Systems (4.0 cr)

Lower Division Core Courses
EE 2015 - Signals, Circuits and Electronics (4.0 cr)
EE 2301 - Introduction to Digital System Design (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

Lower Division Required Courses
Mathematics
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 3584H - Honors Calculus IV: Advanced Placement (5.0 cr)

Physics or Chemistry
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
or PHYS 2311 - Modern Physics (4.0 cr)
or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
or PHYS 2503H - Honors Physics III (4.0 cr)
or Chemistry 2
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

ECE Courses
EE 2115 - Analog and Digital Electronics (4.0 cr)
EE 2361 - Introduction to Microcontrollers (4.0 cr)

Upper Division Required Courses
EE 3015 - Signals and Systems (3.0 cr)
EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
EE 3101 - Circuits and Electronics Laboratory I (2.0 cr)
EE 3102 - Circuits and Electronics Laboratory II (2.0 cr)
EE 3115 - Analog Electronics (3.0 cr)
EE 3161 - Semiconductor Devices (3.0 cr)
EE 3601 - Transmission Lines, Fields, and Waves (3.0 cr)

EE Technical Electives
Students must complete 34 technical elective credits, with a minimum of 22 coming from EE 4xxx/5xxx courses.
Take 34 or more credit(s) from the following:

Department Electives
Take 22 or more credit(s) including 0 or more sub-requirements(s) from the following:

Senior Design Project
A senior design project is required.
• EE 4951W - Senior Design Project [WI] (4.0 cr)
or EE 4981H - Senior Honors Project I (2.0 cr)
  EE 4982V - Senior Honors Project II [WI] (2.0 cr)

•Lab Courses
Two additional EE lab courses are required. Senior honors project students only need to take one.
Take 2 or more course(s) from the following:
• EE 4111 - Advanced Analog Electronics Design (4.0 cr)
• EE 4163 - Energy Conversion and Storage Laboratory (1.0 cr)
• EE 4235 - Linear Control Systems Laboratory (1.0 cr)
• EE 4237 - State Space Control Laboratory (1.0 cr)

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Information current as of September 02, 2020
• EE 4301 - Digital Design With Programmable Logic (4.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)
• EE 4505 - Communications Systems Laboratory (1.0 cr)
• EE 4703 - Electric Drives Laboratory (1.0 cr)
• EE 4722 - Power System Analysis Laboratory (1.0 cr)
• EE 4743 - Switch-Mode Power Electronics Laboratory (1.0 cr)
• EE 4930 - Special Topics in Electrical and Computer Engineering Laboratory (1.0 - 2.0 cr)
• EE 5141 - Introduction to Microsystem Technology (4.0 cr)
• EE 5173 - Basic Microelectronics Laboratory (1.0 cr)
• EE 5327 - VLSI Design Laboratory (3.0 cr)
• EE 5373 - Data Modeling Using R (1.0 cr)
• EE 5545 - Digital Signal Processing Design (3.0 cr)
• EE 5613 - RF/Microwave Circuit Design Laboratory (2.0 cr)
• EE 5622 - Physical Optics Laboratory (1.0 cr)
• EE 5657 - Physical Principles of Thin Film Technology (4.0 cr)
• EE 5707 - Electric Drives in Sustainable Energy Systems Laboratory (1.0 cr)
• EE 5811 - Biological Instrumentation (3.0 cr)

Breadth and Depth Requirements (Specialty Areas)
Take one course in 4 Breadth and Depth Requirement categories below (breadth). Within one of those categories, take a total of 2 courses (depth).

Communications, Signal Processing, and Biomedical
Take 0 or more course(s) from the following:
• EE 4501 - Communications Systems (3.0 cr)
• EE 4541 - Digital Signal Processing (3.0 cr)
• EE 5501 - Digital Communication (3.0 cr)
• EE 5505 - Wireless Communication (3.0 cr)
• EE 5531 - Probability and Stochastic Processes (3.0 cr)
• EE 5542 - Adaptive Digital Signal Processing (3.0 cr)
• EE 5545 - Digital Signal Processing Design (3.0 cr)
• EE 5549 - Digital Signal Processing Structures for VLSI (3.0 cr)
• EE 5551 - Multiscale and Multirate Signal Processing (3.0 cr)
• EE 5561 - Image Processing and Applications (3.0 cr)
• EE 5581 - Information Theory and Coding (3.0 cr)
• EE 5585 - Data Compression (3.0 cr)
• EE 5811 - Biological Instrumentation (3.0 cr)

Controls
Take 0 or more course(s) from the following:
• EE 4231 - Linear Control Systems: Designed by Input/Output Methods (3.0 cr)
• EE 4233 - State Space Control System Design (3.0 cr)
• EE 5231 - Linear Systems and Optimal Control (3.0 cr)
• EE 5235 - Robust Control System Design (3.0 cr)
• EE 5239 - Introduction to Nonlinear Optimization (3.0 cr)
• EE 5251 - Optimal Filtering and Estimation (3.0 cr)

Digital Systems and Computer Architecture
Take 0 or more course(s) from the following:
• EE 4301 - Digital Design With Programmable Logic (4.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)
• EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• EE 4389W - Introduction to Predictive Learning [WI] (3.0 cr)
• EE 5340 - Introduction to Quantum Computing and Physical Basics of Computing (3.0 cr)
• EE 5351 - Applied Parallel Programming (3.0 cr)
• EE 5355 - Algorithmic Techniques for Scalable Many-core Computing (3.0 cr)
• EE 5364 - Advanced Computer Architecture (3.0 cr)
• EE 5371 - Computer Systems Performance Measurement and Evaluation (3.0 cr)
• EE 5391 - Computing With Neural Networks (3.0 cr)
• EE 5393 - Circuits, Computation, and Biology (3.0 cr)
• CSCI 4203 - Computer Architecture (4.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)

VSLI and CAD
Take 0 or more course(s) from the following:
• EE 5301 - VLSI Design Automation I (3.0 cr)
• EE 5302 - VLSI Design Automation II (3.0 cr)
• EE 5323 - VLSI Design I (3.0 cr)
• EE 5324 - VLSI Design II (3.0 cr)
• EE 5327 - VLSI Design Laboratory (3.0 cr)
- EE 5329 - VLSI Digital Signal Processing Systems (3.0 cr)
- EE 5333 - Analog Integrated Circuit Design (3.0 cr)

Electronics, Microelectronics, and Semiconductor Devices
Take 0 or more course(s) from the following:
- EE 4111 - Advanced Analog Electronics Design (4.0 cr)
- EE 4161W - Energy Conversion and Storage [WI] (3.0 cr)
- EE 5121 - Transistor Device Modeling for Circuit Simulation (3.0 cr)
- EE 5141 - Introduction to Microsystem Technology (4.0 cr)
- EE 5163 - Semiconductor Properties and Devices I (3.0 cr)
- EE 5164 - Semiconductor Properties and Devices II (3.0 cr)
- EE 5171 - Microelectronic Fabrication (4.0 cr)
- EE 5181 - Micro and Nanotechnology by Self Assembly (3.0 cr)
- EE 5649 - Infrared Devices and Technology (3.0 cr)
- EE 5657 - Physical Principles of Thin Film Technology (4.0 cr)

Power and Energy
Take 0 or more course(s) from the following:
- EE 4161W - Energy Conversion and Storage [WI] (3.0 cr)
- EE 4701 - Electric Drives (3.0 cr)
- EE 4721 - Introduction to Power System Analysis (3.0 cr)
- EE 4741 - Power Electronics (3.0 cr)
- EE 5705 - Electric Drives in Sustainable Energy Systems (3.0 cr)
- EE 5721 - Power Generation Operation and Control (3.0 cr)
- EE 5741 - Advanced Power Electronics (3.0 cr)

Magnetics, Optics, and RF
Take 0 or more course(s) from the following:
- EE 4607 - Wireless Hardware System Design (3.0 cr)
- EE 4623 - Introduction to Modern Optics (3.0 cr)
- EE 5601 - Introduction to RF/Microwave Engineering (3.0 cr)
- EE 5616 - Antenna Theory and Design (3.0 cr)
- EE 5602 - RF/Microwave Circuit Design (3.0 cr)
- EE 5621 - Physical Optics (3.0 cr)
- EE 5624 - Optical Electronics (4.0 cr)
- EE 5627 - Optical Fiber Communication (3.0 cr)
- EE 5649 - Infrared Devices and Technology (3.0 cr)
- EE 5640 - Introduction to Nano-Optics (3.0 cr)
- EE 5653 - Physical Principles of Magnetic Materials (3.0 cr)
- EE 5655 - Magnetic Recording (3.0 cr)
- EE 5670 - Spintronic Devices (3.0 cr)
- EE 5811 - Biological Instrumentation (3.0 cr)

Other Approved Technical Electives
Up to 12 credits can count from the following courses, fulfilling a portion of the required 34 technical elective credits (additional electives). CSCI 1913 only viable if additional CSCI 4xxx/5xxx class taken which requires CSCI 1913 as a prerequisite. Excludes CSCI 4921. Additional options may be available each semester, including Learning Abroad courses and Grand Challenges courses. Consult with ECE department as needed.
Take 0 - 12 credit(s) from the following:
- AEM 2011 - Statics (3.0 cr)
- AEM 2012 - Dynamics (3.0 cr)
- AEM 2021 - Statics and Dynamics (4.0 cr)
- AEM 3031 - Deformable Body Mechanics (3.0 cr)
- AEM 4601 - Instrumentation Laboratory (3.0 cr)
- BBE 3013 - Engineering Principles of Molecular and Cellular Processes (3.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BMEN 5101 - Advanced Bioelectricity and Instrumentation (3.0 cr)
- BMEN 5111 - Biomedical Ultrasound (3.0 cr)
- BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
- BMEN 5401 - Advanced Biomedical Imaging (3.0 cr)
- BMEN 5411 - Neural Engineering (3.0 cr)
- BMEN 5412 - Neuromodulation (3.0 cr)
- BMEN 5421 - Introduction to Biomedical Optics (3.0 cr)
- CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
- CEGE 3502 - Fluid Mechanics (4.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
• CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
• CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
• CSCI 4xxx
• CSCI 5xxx
• EE 2701 - Sustainable Electricity Supply: Renewables and Conservation [TS] (3.0 cr)
• GCC 3011 - Pathways to Renewable Energy [TS] (3.0 cr)
• GCC 5011 - Pathways to Renewable Energy [TS] (3.0 cr)
• IE 5111 - Systems Engineering I (2.0 cr)
• IE 5113 - Systems Engineering II (4.0 cr)
• IE 5441 - Financial Decision Making (4.0 cr)
• IE 5511 - Human Factors and Work Analysis (4.0 cr)
• IE 5513 - Engineering Safety (4.0 cr)
• IE 5522 - Quality Engineering and Reliability (4.0 cr)
• IE 5531 - Engineering Optimization I (4.0 cr)
• IE 5541 - Project Management (4.0 cr)
• EE 5551 - Production Planning and Inventory Control (4.0 cr)
• IE 5553 - Simulation (4.0 cr)
• INET 4021 - Dev Ops I: Network Programming (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4xxx
• MATH 5xxx
• ME 3324 - Introduction to Thermal Science (3.0 cr)
• ME 3331 - Thermodynamics (3.0 cr)
• ME 3332 - Fluid Mechanics (3.0 cr)
• ME 3333 - Heat Transfer (3.0 cr)
• PHSL 3061 - Principles of Physiology (4.0 cr)
• PHYS 2601 - Quantum Physics (4.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)
• GCC 3027 - Power Systems Journey: Making the Invisible Visible and Actionable [TS] (3.0 cr)
• GCC 5027 - Power Systems Journey: Making the Invisible Visible and Actionable [TS] (3.0 cr)
• AST 3001 - Introduction to Astrophysics (4.0 cr)

Students must complete EE 3041 and EE 4043W to receive co-op credit. The third course in the sequence, EE 4044, is optional. Students may take a maximum of 8 credits of co-op courses in partial fulfillment of technical elective requirements (additional electives).

Take 0 - 8 credit(s) from the following:
• EE 3041 - Industrial Assignment I (2.0 cr)
• EE 4043W - Industrial Assignment II [WI] (4.0 cr)
• EE 4044 - Industrial Assignment III (2.0 cr)

Other Business, Law, and Entrepreneurial Related Courses

Students may take a maximum of 4 credits from the following courses in partial fulfillment of technical elective requirements (additional electives).

Take 0 - 4 credit(s) from the following:
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• MOT 4001 - Leadership, Professionalism and Business Basics for Engineers (2.0 cr)

Management Minor

Students can choose to complete the management minor alongside this degree program. Up to 12 credits of the minor coursework count toward the technical electives requirement (additional electives). Students must complete the management minor to receive any credit. Only those from the following courses can be counted.

Take 0 - 12 credit(s) from the following:
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• FINA 3001 - Finance Fundamentals (3.0 cr)
• HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
• ISCS 3001 - Introduction to Information Technology in Business (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
• PA 4101 - Nonprofit Management and Governance (3.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)

• Other Relevant Minors
Up to 12 credits of additional specified minor coursework taken by students may help fulfill coursework requirements and count toward the technical electives requirement (additional electives) as determined by consultation with the ECE department. These minor options may include computer science, math, physics, product design, interdisciplinary design, accounting, biochemistry, and biology minors among others.

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major; students must choose one course from the following list. Some of these courses may also fulfill other major requirements including additional writing intensive requirements.

Take 0 - 1 course(s) from the following:
• EE 4043W - Industrial Assignment II [WI] (4.0 cr)
• EE 4161W - Energy Conversion and Storage [WI] (3.0 cr)
• EE 4389W - Introduction to Predictive Learning [WI] (3.0 cr)
• EE 4951W - Senior Design Project [WI] (4.0 cr)
• EE 4982V - Senior Honors Project II [WI] (2.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated Bachelor of Electrical Eng/Master of Science in Electrical and Computer Eng.
The Department of Electrical and Computer Engineering offers an integrated Bachelor's and Master's Degree program. Students accepted to the integrated program will be guaranteed admission to the Electrical and Computer Engineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam or submit Letters of Recommendation as part of their graduate application, unlike other students applying to our graduate programs.

Applicants must be enrolled University of Minnesota Twin Cities students admitted to an Electrical Engineering or Computer Engineering undergraduate program. Applicants must meet a Technical GPA minimum of 3.4 (as defined by the College of Science & Engineering) or have at least a 3.2 GPA and additional positive factors that make them eligible.

Applicants must have completed or be taking at least 9 credits of EE 3xxx or 4xxx level courses to be eligible. Depending on application materials and timing, an applicant may be asked to wait for another semester of grades before being admitted or rejected.

Full application instructions can be found at https://ece.umn.edu/combined-degree-program/.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-pan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time; and, therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Credits being applied to the Master's in Electrical and Computer Engineering taken while the student is an undergraduate for use in the integrated program can also be applied later to an Electrical Engineering Ph.D. within our department if a student applies and is admitted. Credits cannot also be applied to the undergraduate degree (i.e., no double dipping).
Twin Cities Campus

Environmental Engineering B.Env.E
CSENG Civil, Envrn & Geo-Eng (CEGE)

College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 125
- Required credits within the major: 108
- Degree: Bachelor of Environmental Engineering

Environmental engineers design and apply technologies to resolve issues of environmental concern. They design systems that produce safe drinking water, treat wastewater so that it can be reused and/or safely returned to the environment, accommodate municipal and hazardous waste, mitigate air pollution, and protect public health. They use engineering and ecological principles to protect and enhance the natural environment, including erosion and sediment control, pollution abatement, watershed management, impaired waters diagnostics, and wetland and ecological restoration.

Focus areas of the program include water chemistry; water and wastewater treatment; water quality; hydrology; groundwater remediation; environmental microbiology; pollutant fate and transport; stream restoration, sustainable design, and air pollution. Environmental engineering is a broad and interdisciplinary field, and the program emphases are chemistry, microbiology, water resources, and fluid mechanics.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 11 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major.

It is recommended that students take CEGE 1101, but this course is not required to be admitted into the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
Calculus I
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
Calculus II
- MATH 1372 - CSE Calculus II (4.0 cr)
- or MATH 1272 - Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)
Multivariable Calculus
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- or MATH 2263 - Multivariable Calculus (4.0 cr)
- or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Science and Engineering Science
Chemical Principles I
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or Honors Chemistry I
- CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
Chemical Principles II
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)

or Honors Chemistry II
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Organic Chemistry
CHEM 2301 - Organic Chemistry I (3.0 cr)

Physics I
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)

or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Physics II
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)

or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Statics
AEM 2011 - Statics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 28 upper division credits in the major must be taken at the University of Minnesota Twin Cities Campus.

CEGE Core
CEGE 3101 - Computer Applications I (3.0 cr)

CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)

CEGE 3103 - Engineering Ethics and Professional Practice (1.0 cr)

CEGE 3301 - Soil Mechanics I (3.0 cr)

CEGE 3402 - Civil Engineering Materials (3.0 cr)

CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)

CEGE 3502 - Fluid Mechanics (4.0 cr)

CEGE 3541 - Environmental Engineering Laboratory (3.0 cr)

CEGE 4101W - Project Management and Engineering Economics [WI] (3.0 cr)

CEGE 4102W - Capstone Design for Civil Engineering [WI] (4.0 cr)

CEGE 4501 - Hydrologic Design (4.0 cr)

CEGE 4502 - Water and Wastewater Treatment (3.0 cr)

Biological Sciences
Students should take one 3 credit class or higher. A course taken to fulfill the Biological Sciences Liberal Education requirement will also fulfill this major requirement. Students whose Biological Sciences Liberal Education requirement is waived can choose from the following courses, which would also count toward the Selective Elective requirement.

BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)

or BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)

or PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)

or CEGE 5551 - Environmental Microbiology (3.0 cr)

or EEB 3407 - Ecology (3.0 cr)

or ESCI 4801 - Geomicrobiology (3.0 cr)

ESCI
Take any one ESCI course 3 credits or higher.

Courses used to meet this requirement may not be used to meet another major requirement.

Take 3 or more credit(s) from the following:

• ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)

• ESCI 1003 - Dinosaurs and Our World [BIOL, ENV] (4.0 cr)

• ESCI 1005 - Geology and Cinema [PHYS, ENV] (4.0 cr)

• ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)

• ESCI 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)

• ESCI 1012 - Natural Disasters [TS] (3.0 cr)

• ESCI 1101 - Introduction to Geology (lecture only) [ENV] (3.0 cr)

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The following courses are available:

- ESCI 1105 - Geology and Cinema (lecture only) [ENV] (3.0 cr)
- ESCI 1106 - Oceanography [ENV] (3.0 cr)
- ESCI 2201 - Solid Earth Dynamics (4.0 cr)
- ESCI 2202 - Earth History (4.0 cr)
- ESCI 2203 - Earth Surface Dynamics (4.0 cr)
- ESCI 2301 - Mineralogy (3.0 cr)
- ESCI 2302 - Petrology (3.0 cr)
- ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
- ESCI 3004 - Water and Society [ENV] (3.0 cr)
- ESCI 3005 - Earth Resources (3.0 cr)
- ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
- ESCI 3202 - Fluid Earth Dynamics (4.0 cr)
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
- ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
- ESCI 3911 - Introductory Field Geology (4.0 cr)
- ESCI 4016 - Undergraduate Seminar: Current Topics in Earth & Environmental Sciences (1.0 - 4.0 cr)
- ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- ESCI 4203 - Environmental Geophysics (3.0 cr)
- ESCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
- ESCI 4211 - Solid Earth Geophysics I (3.0 cr)
- ESCI 4212 - Solid Earth Geophysics II (3.0 cr)
- ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
- ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
- ESCI 4501 - Structural Geology (3.0 cr)
- ESCI 4502 - Tectonic Styles (3.0 cr)
- ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
- ESCI 4702 - General Hydrogeology (4.0 cr)
- ESCI 4703 - Glacial Geology (4.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- ESCI 4911 - Advanced Field Geology (4.0 cr)
- ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
- ESCI 5102 - Climate Change and Human History (3.0 cr)
- ESCI 5201 - Time-Series Analysis of Geological Phenomena (3.0 cr)
- ESCI 5203 - Mineral and Rock Physics (3.0 cr)
- ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
- ESCI 5302 - Isotope Geology (3.0 cr)
- ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
- ESCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
- ESCI 5402 - Science and Politics of Global Warming (3.0 cr)
- ESCI 5503 - Advanced Petrology (3.0 cr)
- ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
- ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)

Mathematics
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)

Mechanics
AEM 3031 - Deformable Body Mechanics (3.0 cr)

Thermodynamics
CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

Electives
As part of the elective requirements for environmental engineering, students must take a minimum of 9 credits from the Engineering Science and Design category and a minimum of 3 credits from the Engineering Science and Policy category. Including these categories, the program requires a minimum of 21 electives. Take 21 or more credit(s) including 3 or more sub-requirements(s) from the following:

Engineering Science and Design (ESD) Electives
Students must take a minimum of 9 credits from this category.
Take 9 or more credit(s) from the following:
• BBE 4523 - Ecological Engineering Design (3.0 cr)
• BBE 4535 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
• BBE 4753 - Air Quality and Pollution Control Engineering (3.0 cr)
• CEGE 4351 - Groundwater Mechanics (3.0 cr)
• CEGE 4511 - Hydraulic Structures (3.0 cr)
• CEGE 4512 - Open Channel Hydraulics (4.0 cr)
• CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
• CEGE 4563 - Pollutant Fate and Transport: Processes and Modeling (3.0 cr)
• CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
• CEGE 5512 - Stochastic Ecohydrology (3.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)
• CEGE 5543 - Introductory Environmental Fluid Mechanics (4.0 cr)
• CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
  or BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
• CEGE 5551 - Environmental Microbiology (3.0 cr)
  or BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
• CEGE 4513 - Energy Conversion from Wind, Hydro and Solar Resources (3.0 cr)
  or CEGE 5513 - Energy Conversion from Wind, Hydro and Solar Resources (3.0 cr)

• Environmental Sciences and Policy (ESP) Electives
  Students must take a minimum of 3 credits from this category. ESCI courses used to meet this requirement may not be used to meet another major requirement.
  Take 3 or more credit(s) from the following:
  • EEB 5601 - Limnology (3.0 cr)
  • ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
  • ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
  • ESCI 4702 - General Hydrogeology (4.0 cr)
  • ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
  • ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
  • ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
  • ESPM 3777 - Climate Change - Physics, Myths, Mysteries, and Uncertainties (3.0 cr)
  • LAAS 5311 - Soil Chemistry and Mineralogy (3.0 cr)
  • PA 5711 - Science, Technology & Environmental Policy (3.0 cr)
  • WRS 5101 - Water Policy (3.0 cr)
  or PA 5723 - Water Policy (3.0 cr)
  • EEB 3407 - Ecology (3.0 cr)
  or EEB 3408W - Ecology [WI] (4.0 cr)
  • ESCI 4801 - Geomicrobiology (3.0 cr)
  or PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
  • GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
  or GCC 5005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)

• Technical Electives
  The remainder of the 21 credit technical elective requirements can be satisfied by taking courses listed below. All 4xxx or higher courses from the College of Science and Engineering (including CEGE) are acceptable as technical electives. Courses offered at other levels (3xxx-level or lower) or by other colleges (especially, but not limited to CFANS and CBS) need approval from your CEGE faculty advisor. The CEGE Undergraduate Handbook Appendix A identifies recommended electives.
  Take 0 or more credit(s) from the following:
  • AEM 4xxx
  • AEM 5xxx
  • AST 4xxx
  • AST 5xxx
  • BBE 4xxx
  • BBE 5xxx
  • BMEN 4xxx
  • BMEN 5xxx
  • CEGE 3xxx
  • CEGE 4xxx
  • CEGE 5xxx
  • CHEM 4xxx
  • CHEM 5xxx
  • CHEN 4xxx
  • CHN 5xxx
  • CMPE 4xxx
  • CMPE 5xxx
  • CSCI 4xxx
  • CSCI 5xxx
Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
- CEGE 3402 - Civil Engineering Materials (3.0 cr)
- CEGE 4102W - Capstone Design for Civil Engineering [WI] (4.0 cr)
- EEB 3408W - Ecology [WI] (4.0 cr)
- ESCI 3303W - Geochemical Principles [WI] (4.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Environmental Engineering B.Env.E/Civil Engineering M.S.

The Department of Civil, Environmental, and Geo- Engineering offers an integrated Bachelors and Masters Degree program. Students accepted into the integrated program will be guaranteed admission to the Civil Engineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate program. Applicants must be enrolled in the University of Minnesota Twin Cities Environmental Engineering undergraduate program. Applicants should meet a technical GPA minimum of 3.5 (as defined by the College of Science and Engineering).

Applicants must have completed at least 75 credits at the time of their application.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time and therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Most coursework applied to the graduate degree should be taken at the graduate level (i.e., 5xxx or above). No more than 9 credits of 4xxx-level technical elective credits can count towards your masters degree*. Credits cannot also be applied to the undergraduate degree. (i.e., no double dipping).

Credits applied to the Civil Engineering or Geoengineering Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to the Civil Engineering Ph.D. within our department if a student applies and is admitted.

Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max). CEGE 5xxx level elective that fits your interests and background or an approved graduate level elective. We recommend waiting to take CEGE 8xxx level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites, advisor approval, or instructor approval.

*Please refer to your advisor or the CEGE program coordinator (cegesps@umn.edu) for more details on which courses count towards a
graduate degree.

Students in this program should graduate with their Bachelor's in Environmental Engineering at the end of year 4 and graduate with their M.S. at end of year 5.

**Environmental Engineering B.Env.E/Geoengineering M.S.**

The Department of Civil, Environmental, and Geo-Engineering offers an integrated Bachelors and Masters Degree program. Students accepted into the integrated program will be guaranteed admission to the Geoengineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate program. Applicants must be enrolled in the University of Minnesota Twin Cities Environmental Engineering undergraduate program. Applicants should meet a technical GPA minimum of 3.5 (as defined by the College of Science and Engineering).

Applicants must have completed at least 75 credits at the time of their application.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time and therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Most coursework applied to the graduate degree should be taken at the graduate level (i.e., 5xxx or above). No more than 9 credits of 4xxx-level technical elective credits can count towards your masters degree*. Credits cannot also be applied to the undergraduate degree. (i.e., no double dipping).

Credits applied to the Civil Engineering or Geoengineering Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to the Civil Engineering Ph.D. within our department if a student applies and is admitted.

Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max): CEGE 5xxx level course that fits your interests and background or an approved graduate level elective. We recommend waiting to take CEGE 8xxx level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites, advisor approval, or instructor approval.

*Please refer to your advisor or the CEGE program coordinator (cegesps@umn.edu) for more details on which courses count towards a graduate degree.

Students in this program should graduate with their Bachelor's in Environmental Engineering at the end of year 4 and graduate with their M.S. at end of year 5.
Twin Cities Campus

Environmental Geosciences BS
Department of Earth Sciences
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 86
- This program requires summer terms.
- Degree: Bachelor of Science

Environmental geoscience is the study of processes within, and interactions between, the atmosphere, the ocean, and the land that determine the habitability and sustainability of the planet. In short, it is the branch of geoscience that is concerned with the interactions between humans and the geologic environment. The subject covers natural processes that have been modifying the planet over its entire history, but with a strong focus on understanding the modern system and how it has been affected by human activities. Students earning a Major in Environmental Geoscience will develop key observational and analytical skills that enable them to address fundamental questions about the functioning of geoscience systems, especially in relation to hydrology and water quality, soils, mineral resources, and climate change.

This major is well suited to those interested in pursuing geoscience careers in environmental, geological, and hydrogeological consulting, industry, and local, state, and federal government agencies. In addition to acquiring a foundation in the geologic processes that govern water, soil, and natural resource development, students will gain a range of transferable skills, including: written and oral reports; critical analysis and interpretation of data; and group work.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 6 courses before admission to the program.

Freshman and transfer students are usually admitted to pre-major status before admission to this major

Students interested in the Environmental Geosciences as a major may want to consider taking ESCI 1001 or other ESCI 1xxx course. At least 27 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Courses Required for Admission to the Program
Calculus I, Calculus II, Physics I, Chemistry I, and Mineralogy
ESCI 2301 - Mineralogy (3.0 cr)

Calculus I
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1372 - CSE Calculus II (4.0 cr)
  or MATH 1272 - Calculus II (4.0 cr)
  or MATH 1572H - Honors Calculus II (4.0 cr)

Chemistry
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  or CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)

Chemistry Honors
- CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Physics
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

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Information current as of September 02, 2020
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001 First Year Experience.

Courses Required for Environmental Geosciences Major

Statistics
Take 1 or more course(s) from the following:
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)

Major Courses
ESCI 2201 - Solid Earth Dynamics (4.0 cr)
ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
ESCI 3891 - Field Methods (2.0 cr)
ESCI 3911 - Introductory Field Geology (4.0 cr)
ESCI 4203 - Environmental Geophysics (3.0 cr)
ESCI 4401 - Aquifer Environmental Geochemistry (3.0 cr)
ESCI 4501 - Structural Geology (3.0 cr)
ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
ESCI 4701 - Geomorphology (4.0 cr)
ESCI 4702 - General Hydrogeology (4.0 cr)
ESCI 4801 - Geomicrobiology (3.0 cr)
ESCI 5805 - Standards and Practices for Professional Geoscienists (3.0 cr)
GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Advanced Field Geology
Take 1 or more course(s) from the following:
- ESCI 4911 - Advanced Field Geology (4.0 cr)
- ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)

Major Electives
Major electives contribute to a holistic understanding of environmental geoscience. Please take 12 or more credits from the following course list.
Take 12 or more credit(s) from the following:

Earth Science Related Courses
Take 0 or more course(s) from the following:
- EEB 5601 - Limnology (3.0 cr)
- ESCI 2202 - Earth History (4.0 cr)
- ESCI 2203 - Earth Surface Dynamics (4.0 cr)
- ESCI 2302 - Petrology (3.0 cr)
- ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
- ESCI 3004 - Water and Society [ENV] (3.0 cr)
- ESCI 3005 - Earth Resources (3.0 cr)
- ESCI 3006 - Rocks and Stars: Introduction to Planetary Science (3.0 cr)
- ESCI 3093 - Directed Studies in Earth & Environmental Sciences: Junior (1.0 - 4.0 cr)
- ESCI 3202 - Fluid Earth Dynamics (4.0 cr)
- ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
- ESCI 3890 - Field Workshop (1.0 cr)
- ESCI 3896 - Internship in Earth and Environmental Sciences (1.0 - 4.0 cr)
- ESCI 4010 - Undergraduate Seminar: Current Topics in Earth & Environmental Sciences (1.0 - 4.0 cr)
- ESCI 4093 - Directed Studies in Earth & Environmental Sciences: Senior (1.0 - 4.0 cr)
- ESCI 4094 - Senior Thesis (2.0 cr)
- ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- ESCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
- ESCI 4211 - Solid Earth Geophysics I (3.0 cr)
• ESCI 4212 - Solid Earth Geophysics II (3.0 cr)
• ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
• ESCI 4502 - Tectonic Styles (3.0 cr)
• ESCI 4703 - Glacial Geology (4.0 cr)
• ESCI 5201 - Time-Series Analysis of Geological Phenomena (3.0 cr)
• ESCI 5203 - Mineral and Rock Physics (3.0 cr)
• ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
• ESCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
• ESCI 5402 - Science and Politics of Global Warming (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (3.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)

• Civil, Environmental, and Geoengineering
Take 0 or more course(s) from the following:
• CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
• CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
• CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)

• Data Literacy and Environmental Geoscience
Take 0 or more course(s) from the following:
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• CSCI 3011 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
• IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 3032 - Regression and Correlated Data (4.0 cr)

• Social Sciences and Environmental Geoscience
Take 0 or more course(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• GEOG 3401 - Ethics in Science and Technology [HIS, CIV] (3.0 cr)
• PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)

• Grand Challenge Courses
Take 0 or more course(s) from the following:
• GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
• ESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
Twin Cities Campus
Geoengineering B.GeoE.
CSENG Civil, Envrm & Geo-Eng (CEGE)

College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 125
- Required credits within the major: 105
- This program requires summer terms.
- Degree: Bachelor of Geoengineering

Geoengineers solve problems and design systems with, on, and in geological materials, while at the same time protecting the environment. For example, they learn how to evaluate a site on which a tunnel, dam, or road might be built. Geoengineers are involved with (a) geotechnical site investigation and characterization; (b) rock and soil slope stability analysis; (c) groundwater studies and engineering, natural and manmade hazard investigations, and (d) exploration and development of fossil fuel and mineral deposits. They interact with civil engineers to design foundations and retaining walls. Geoengineers prospect for minerals, building material resources, and drinking water. They carry out hazard and risk assessments and mapping for landslides, and they are responsible for environmental assessments or clean-up activities where pollution has occurred. They discover ways to protect the earth while still engineering systems needed for the well being of society.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 10 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

It is recommended that students take CEGE 1101, but this course is not required to be admitted to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics

Calculus I
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1372 - CSE Calculus II (4.0 cr)
- or MATH 1272 - Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)

Multivariable Calculus
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- or MATH 2263 - Multivariable Calculus (4.0 cr)
- or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Science and Engineering Science

Chemical Principles I
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or Honors Chemistry I
- CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Chemical Principles II
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or Honors Chemistry II
CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Physics I
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Physics II
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Statics
AEM 2011 - Statics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 32 upper division credits in the major must be taken at the University of Minnesota Twin Cities Campus.

CEGE Core
CEGE 3101 - Computer Applications I (3.0 cr)
CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
CEGE 3103 - Engineering Ethics and Professional Practice (1.0 cr)
CEGE 3301 - Soil Mechanics I (3.0 cr)
CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
CEGE 3502 - Fluid Mechanics (4.0 cr)
CEGE 4101W - Project Management and Engineering Economics [WI] (3.0 cr)
CEGE 4104W - Capstone Design for Geoengineering [WI] (4.0 cr)
CEGE 4121 - Computer Applications II (3.0 cr)
CEGE 4311 - Rock Mechanics (4.0 cr)
CEGE 4351 - Groundwater Mechanics (3.0 cr)

Earth Sciences Core
ESCI 2201 - Solid Earth Dynamics (4.0 cr)
ESCI 2301 - Mineralogy (3.0 cr)
ESCI 3891 - Field Methods (2.0 cr)
ESCI 4501 - Structural Geology (3.0 cr)

Field Geology
ESCI 3911 - Introductory Field Geology (4.0 cr)
or ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)

Mathematics
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

Mechanics
AEM 3031 - Deformable Body Mechanics (3.0 cr)

Dynamics or Substitute
AEM 2012 - Dynamics (3.0 cr)
or CHEM 2301 - Organic Chemistry I (3.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

GeoE Technical Electives
As part of the elective requirements for geoengineering, students must take an elective to satisfy the Earth Sciences Core, a minimum of 3 credits from Earth Science 4xxx or higher to satisfy the Earth Science Technical Electives, and a minimum of 1 course from the
CEGE Technical Electives. Including these categories, the program requires a minimum of 14 credits of electives.
Take 14 or more credit(s) including exactly 4 sub-requirements(s) from the following:

**Earth Science Core Elective**
Students must take a minimum of 1 course from the following:
Take exactly 1 course(s) from the following:
- ESCI 2203 - Earth Surface Dynamics (4.0 cr)
- ESCI 2302 - Petrology (3.0 cr)

**Earth Science Technical Electives**
Students must take a minimum of 3 credits of 4xxx or higher electives offered by the Department of Earth Sciences. All 4xxx or higher ESCI courses that are not required can be used as technical electives.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ESCI 4xxx
- ESCI 5xxx

**CEGE Technical Electives**
Students must take a minimum of 1 course from the following:
Take exactly 1 course(s) from the following:
- CEGE 4301 - Soil Mechanics II (3.0 cr)
- CEGE 4501 - Hydrologic Design (4.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)

**Technical Electives**
The remainder of the 14 technical elective requirements can be satisfied by taking courses listed below. All 4xxx or higher courses from the College of Science and Engineering (including CEGE and ESCI) are acceptable as technical electives. Other courses not in the list can be used as technical electives with specific approval from a CEGE advisor. The CEGE undergraduate handbook Appendix A identifies recommended electives by area of emphasis.
Take 0 or more credit(s) from the following:
- AEM 4511 - Mechanics of Composite Materials (3.0 cr)
- AEM 4581 - Mechanics of Solids (3.0 cr)
- AEM 4xxx
- AEM 5501 - Continuum Mechanics (3.0 cr)
- AEM 5503 - Theory of Elasticity (3.0 cr)
- AEM 5xxx
- AST 4xxx
- AST 5xxx
- BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
- BBE 4523 - Ecological Engineering Design (3.0 cr)
- BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)
- BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
- BBE 4xxx
- BBE 5xxx
- BMEN 4xxx
- CEGE 1101 - Introduction to Civil, Environmental, and Geo-Engineering (1.0 cr)
- CEGE 3111 - CADD for Civil Engineers (2.0 cr)
- CEGE 3201 - Transportation Engineering (3.0 cr)
- CEGE 3202 - Surveying & Mapping (2.0 cr)
- CEGE 3401 - Linear Structural Analysis (3.0 cr)
- CEGE 3402 - Civil Engineering Materials (3.0 cr)
- CEGE 3541 - Environmental Engineering Laboratory (3.0 cr)
- CEGE 4000H - Honors Research Seminar (1.0 cr)
- CEGE 4011 - Special Topics (1.0 - 4.0 cr)
- CEGE 4094H - Senior Honors Thesis (2.0 cr)
- CEGE 4170 - Independent Study I (1.0 - 4.0 cr)
- CEGE 4180 - Independent Study II (1.0 - 4.0 cr)
- CEGE 4190 - Engineering Co-op Assignment (2.0 - 6.0 cr)
- CEGE 4201 - Principles of Highway Design (3.0 cr)
- CEGE 4253 - Pavement Engineering and Management (3.0 cr)
- CEGE 4301 - Soil Mechanics II (3.0 cr)
- CEGE 4352 - Groundwater Modeling (3.0 cr)
- CEGE 4401 - Steel and Reinforced Concrete Design (4.0 cr)
- CEGE 4411 - Matrix Structural Analysis (3.0 cr)
- CEGE 4412 - Reinforced Concrete II (3.0 cr)
- CEGE 4413 - Steel Design II (3.0 cr)
- CEGE 4501 - Hydrologic Design (4.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
- CEGE 4511 - Hydraulic Structures (3.0 cr)
- CEGE 4512 - Open Channel Hydraulics (4.0 cr)
• CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
• CEGE 4562 - Environmental Remediation Technologies (3.0 cr)
• CEGE 4563 - Pollutant Fate and Transport: Processes and Modeling (3.0 cr)
• CEGE 4582 - Field Methods in Water Quality: Norway (3.0 cr)
• CEGE 4xxx
• CEGE 5094 - Directed Research (1.0 - 4.0 cr)
• CEGE 5180 - Special Topics (1.0 - 4.0 cr)
• CEGE 5214 - Transportation Systems Analysis (3.0 cr)
• CEGE 5341 - Wave Methods for Nondestructive Testing (3.0 cr)
• CEGE 5342 - Introduction to Inverse Problems (3.0 cr)
• CEGE 5351 - Advanced Engineering Mathematics I (3.0 cr)
• CEGE 5411 - Applied Structural Mechanics (3.0 cr)
• CEGE 5414 - Prestressed Concrete Design (3.0 cr)
• CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
• CEGE 5512 - Stochastic Ecohydrology (3.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)
• CEGE 5542 - Experimental Methods in Environmental Engineering (3.0 cr)
• CEGE 5543 - Introductory Environmental Fluid Mechanics (4.0 cr)
• CEGE 5551 - Environmental Microbiology (3.0 cr)
• CEGE 5552 - Environmental Microbiology Laboratory (1.0 cr)
• CEGE 5xxx
• CHEM 4xxx
• CHEM 5xxx
• CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)
• CHEN 4xxx
• CHEN 5xxx
• CMPE 4xxx
• CMPE 5xxx
• CSCI 4xxx
• CSCI 5xxx
• EE 4xxx
• EEB 3407 - Ecology (3.0 cr)
• EEB 4xxx
• EEB 5601 - Limnology (3.0 cr)
• ESCI 4203 - Environmental Geophysics (3.0 cr)
• ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
• ESCI 4701 - Geomorphology (4.0 cr)
• ESCI 4702 - General Hydrogeology (4.0 cr)
• ESCI 4703 - Glacial Geology (4.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
• ESCI 4xxx
• ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
• ESCI 5xxx
• ESPM 5605 - Recycling: Extending Raw Materials Supplies (3.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
• IE 4xxx
• IE 5111 - Systems Engineering I (2.0 cr)
• IE 5113 - Systems Engineering II (4.0 cr)
• IE 5531 - Engineering Optimization I (4.0 cr)
• IE 5545 - Decision Analysis (4.0 cr)
• IE 5553 - Simulation (4.0 cr)
• IE 5xxx
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4xxx
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5xxx
• MATS 4xxx
• MATS 5xxx
• ME 4xxx
• ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• ME 5xxx
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• PA 4200 - Urban and Regional Planning (3.0 cr)
• PA 5013 - Law and Urban Land Use (1.5 cr)
• PA 5204 - Urban Spatial and Social Dynamics (3.0 cr)
• PA 5213 - Introduction to Site Planning (3.0 cr)
• PHYS 4xxx
• PHYS 5xxx
• STAT 4xxx
• STAT 5xxx
• WRS 5101 - Water Policy (3.0 cr)
• CEGE 4211 - Traffic Engineering (3.0 cr)
  or CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 4416 - Sensors in Infrastructure (3.0 cr)
  or CEGE 5416 - Sensors in Infrastructure (3.0 cr)
• CEGE 4423W - Process Control and Instrumentation [WI] (3.0 cr)
• CEGE 5523 - Process Control and Instrumentation (3.0 cr)
• CEGE 4417 - Structural Engineering Design of Wood Buildings (3.0 cr)
  or CEGE 5417 - Structural Engineering Design of Wood Buildings (3.0 cr)
• CEGE 4513 - Energy Conversion from Wind Hydro and Solar Resources (3.0 cr)
  or CEGE 5513 - Energy Conversion from Wind, Hydro and Solar Resources (3.0 cr)
• CEGE 4533 - Renewable Energy Technologies [TS] (3.0 cr)
• CEGE 4581 - Design for Sustainable Development - India [GP, TS] (3.0 cr)
  or CEGE 5557 - Design for Sustainable Development - India (3.0 - 9.0 cr)
• CEGE 4583 - Design for Life: Water in Tanzania [GP, TS] (3.0 cr)
• CEGE 4583 - Design for Life: Water in Tanzania [GP, TS] (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5213 - Transit Planning and Management (3.0 cr)
  or PA 5231 - Transit Planning and Management (3.0 cr)
• CEGE 5213 - Transit Planning and Management (3.0 cr)
  or PA 5231 - Transit Planning and Management (3.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• CEGE 3402 - Civil Engineering Materials (3.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
• CEGE 4104W - Capstone Design for Geoengineering [WI] (4.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Geoengineering B.GeoE./Geoengineering M.S.

The Department of Civil, Environmental, and Geo- Engineering offers an integrated Bachelors and Masters Degree program. Students accepted into the integrated program will be guaranteed admission to the Geoengineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate program. Applicants must be enrolled in the University of Minnesota Twin Cities Geoengineering undergraduate program. Applicants should meet a technical GPA minimum of 3.5 (as defined by the College of Science and Engineering).

Applicants must have completed at least 75 credits at the time of their application.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.
Geoengineering B.GeoE./Civil Engineering M.S.
The Department of Civil, Environmental, and Geo-Engineering offers an integrated Bachelors and Masters Degree program. Students accepted into the integrated program will be guaranteed admission to the Civil Engineering MS as long as they complete their undergraduate program. Accepted students will not need to take the GRE exam as part of their graduate application, unlike other students applying to our graduate program. Applicants must be enrolled in the University of Minnesota Twin Cities Geoengineering undergraduate programs. Applicants should meet a technical GPA minimum of 3.5 (as defined by the College of Science and Engineering).

Applicants must have completed at least 75 credits at the time of their application.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses not in this sub-plan by that time cannot be updated at a later time and therefore will not be eligible for use towards the Masters degree.

Students can transfer a maximum of 16 credits to the graduate program taken during their integrated senior undergraduate year. Students must spend a minimum of two semesters as a graduate student after the completion of their undergraduate degree. Most coursework applied to the graduate degree should be taken at the graduate level (i.e., 5xxx or above). No more than 9 credits of 4xxx-level technical elective credits can count towards your masters degree*. Credits cannot also be applied to the undergraduate degree. (i.e., no double dipping).

Credits applied to the Civil Engineering or Geoengineering Masters taken while the student is an undergraduate for use in the integrated program can also be applied later to the Civil Engineering Ph.D. within our department if a student applies and is admitted. Students should consider taking the following courses/requirements to apply toward their graduate degree as an undergraduate integrated program student (16 credits max): CEGE 5xxx level course that fits your interests and background or an approved graduate level elective. We recommend waiting to take CEGE 8xxx level courses for your graduate year, but this level of coursework is still available to you if you have the appropriate prerequisites, advisor approval, or instructor approval.

*Please refer to your advisor or the CEGE program coordinator (cegesps@umn.edu) for more details on which courses count towards a graduate degree.

Students in this program should graduate with their Bachelor's in Geoengineering at the end of year 4 and graduate with their M.S. at end of year 5.
Twin Cities Campus
Industrial and Systems Engineering B.I.Sy.E.

College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 122
- Required credits within the major: 102
- Degree: Bachelor of Industrial and Systems Engineering

The industrial and systems engineering curriculum combines analytics (optimization, simulation, probability, and statistics) and management (project management, economics, and business) to support the modeling, design, and optimization of systems across a wide range of applications and domains.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 9 courses before admission to the program.

Freshmen students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- or MATH 1372 - CSE Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)
- MATH 2374 and equivs
  - MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
  - or MATH 2263 - Multivariable Calculus (4.0 cr)
  - or MATH 2573H - Honors Calculus III (4.0 cr)

Physical Sciences
Chemistry
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Physics
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
- PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
- or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Introduction ISyE Courses
- IE 1101 - Foundations of Industrial and Systems Engineering (4.0 cr)
- IE 2021 - Engineering Economics (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For
more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

At least 29 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Non-ISyE Required Courses

CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Linear Algebra
MATH 2142 - Elementary Linear Algebra (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

Select from one of the following courses
Take 1 or more course(s) from the following:
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• FINA 3001 - Finance Fundamentals (3.0 cr)
• IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)

ISyE Courses
IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
IE 3011 - Optimization I (4.0 cr)
IE 3553 - Simulation (4.0 cr)
IE 4011 - Stochastic Models (4.0 cr)
IE 3522 - Quality Engineering and Reliability (4.0 cr)
IE 4551 - Production and Inventory Control (4.0 cr)
IE 3012 - Optimization II (4.0 cr)
IE 4511 - Human Factors (4.0 cr)
IE 4541W - Project Management [WI] (4.0 cr)
IE 4041W - Senior Design [WI] (4.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• IE 4041W - Senior Design [WI] (4.0 cr)
• IE 4541W - Project Management [WI] (4.0 cr)

Technical Electives

Technical Electives
Take 15 or more credit(s) from the following:
• MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
• ACCT 3001 - Introduction to Management Accounting (3.0 cr)
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• CEGE 3201 - Transportation Engineering (3.0 cr)
• CEGE 4211 - Traffic Engineering (3.0 cr)
• CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
• ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
• ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
• FINA 3001 - Finance Fundamentals (3.0 cr)
• HINF 5430 - Foundations of Health Informatics I (3.0 cr)
• IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
• IDSC 3103 - Data Modeling and Databases (2.0 cr)
• IDSC 3104 - Enterprise Systems (2.0 cr)
• IDSC 4444 - Descriptive and Predictive Analytics (2.0 cr)
• IE 3041 - Industrial Assignment I (2.0 cr)
• IE 4043W - Industrial Assignment II [WI] (4.0 cr)
• IE 4044 - Industrial Assignment III (2.0 cr)
• IE 4894 - Directed Senior Honors Thesis (2.0 cr)
• IE 5080 - Topics in Industrial Engineering (1.0 - 4.0 cr)
• IE 5111 - Systems Engineering I (2.0 cr)
• IE 5113 - Systems Engineering II (4.0 cr)
• IE 5441 - Financial Decision Making (4.0 cr)
• IE 5545 - Decision Analysis (4.0 cr)
• IE 5561 - Analytics and Data-Driven Decision Making (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
• ME 3331 - Thermodynamics (3.0 cr)
• MGMT 3001 - Fundamentals of Management (3.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
• MGMT 4040 - Negotiation Strategies (4.0 cr)
• MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
• MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
• MGMT 5102 - StartUp: Customer Development and Testing (2.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• MM 3001W - Manufacturing in the Global Economy [WI] (3.0 cr)
• MM 3305 - Advanced 3D Printing for Innovative Business Practices (3.0 cr)
• MM 4039 - The Science of Sourcing: Partnerships for Success (3.0 cr)
• MOT 4001 - Leadership, Professionalism and Business Basics for Engineers (2.0 cr)
• PDES 5701 - User-Centered Design Studio (3.0 cr)
• PDES 3704 - Computer-Aided Design 1: Solid Modeling and Rendering (3.0 cr)
• PDES 3711 - Product Innovation Lab (4.0 cr)
• PUBH 6717 - Decision Analysis for Health Care (2.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)
• SCO 3045 - Sourcing and Supply Management (2.0 cr)
• STAT 3022 - Data Analysis (4.0 cr)
• STAT 3032 - Regression and Correlated Data (4.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics II (4.0 cr)
• STAT 5010 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Theory of Statistics II (4.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• APEC 5721 - Economics of Science and Technology Policy (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• DES 3131 - User Experience in Design (4.0 cr)
• DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
• EE 5373 - Data Modeling Using R (1.0 cr)
• ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
• ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
• ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Integrated B.ISyE/MS.ISyE
Students can prepare for a rewarding career in the area of Analytics by earning both a Bachelor's in ISyE and a Master of Science in ISyE (Analytics track) in just five years through ISyEs integrated B.ISyE/M.S. in ISyE program. Students in the integrated program can save both time and money without sacrificing any aspect of the undergraduate or graduate experience.

Benefits of the Integrated Program
The integrated program offers streamlined early admission to the MS program and the possibility of early completion of the MS degree.

ISyE undergraduate students are eligible to apply to the integrated program as early as spring of their junior year and receive an admission decision by that summer. Admitted students can start earning course credit toward their graduate degree during their senior year. Students who begin their freshman year with credit for three or more Bachelors courses can often complete both the Bachelors and Masters degrees within five years (10 semesters).

Completion of the Analytics track M.S. degree allows students to broaden and deepen their knowledge of analytics (optimization, operations research, data analysis, computation, and statistics) considerably beyond what is covered in the undergraduate curriculum. The Analytics track of the M.S. program includes rigorous coursework as well as an industry-sponsored capstone project. Further information about the Analytics track is available at https://cse.umn.edu/isye/ms-analytics.

Integrated Program Curriculum

Students are required to have at least 122 course credits for the Bachelor's degree, and at least 30 additional credits for the Analytics track M.S. degree. Among the 30 M.S. credits, 24 are required course credits and 6 are approved elective credits. Credits cannot be shared between the two degrees; double counting of courses is not allowed.

The sample program below provides just one example of how a student who entered the university as a freshman with three liberal education courses completed can earn the B.ISyE and M.S. in ISyE degrees in five years (10 semesters). Such a student could complete most technical elective courses during the junior year, and begin completing M.S. courses during the senior year. With this plan, the student would graduate with the B.ISyE degree at the end of the 4th year of study, and would graduate with the M.S. degree at the end of the 5th year of study.

Students who entered the university without any credits are also eligible to apply to the integrated program, but they may need an additional semester to complete the Masters degree.

Sample Fourth- and Fifth-year Course Sequence

This plan is not a contract and is subject to variation. Modifications of the sequence are allowed for those who have completed a different number of undergraduate technical electives.

*Courses marked with asterisks count toward the M.S. degree and cannot also be used as technical electives for the B.ISyE degree.

4th Year Fall Semester
IE 3553Simulation
IE 4511Human Factors
IE 4541WP/Project Management
STAT 5302Applied Regression Analysis*
4th Year Spring Semester
IE 4041W Senior Design
Undergraduate Technical Elective
IE 5561 Analytics and Data-driven Decision Making*
CSCI 5521 Intro to Machine Learning* OR CSCI 5523 Intro to Data Mining*

Graduate with Bachelor's in ISyE at end of Year 4

5th Year Fall Semester
IE 5773 Practice Focused Seminar*
IE 5531 Engineering Optimization I*
IE 5801 Capstone Project Course*
ME 8001 Research Ethics and Professional Practice*

5th Year Spring Semester
IE 5545 Decision Analysis*
Approved M.S. Elective*
Approved M.S. Elective*

Graduate with M.S. at end of Year 5

Additional Notes
No course may be counted toward both degrees. Credits from any individual course may be counted toward at most one of the degrees. Double counting of credits is not allowed.

Courses that will be used to fulfill Masters degree requirements must appear in this sub-plan by the tenth day of the semester in which the student is enrolled in the courses.

Any final edits or updates to this sub-plan must be reflected on the APAS no later than the last day of instruction in the semester in which the undergraduate degree will be awarded. Courses in this sub-plan by that time cannot be updated at a later time; and, therefore will not be eligible for use towards the Master's degree.

Integrated B.ISyE/MS.ISyE Required Courses
STAT 5302 - Applied Regression Analysis (4.0 cr)
IE 5561 - Analytics and Data-Driven Decision Making (4.0 cr)
CSCI 5521 - Introduction to Machine Learning (3.0 cr)
or CSCI 5523 - Introduction to Data Mining (3.0 cr)
Twin Cities Campus
Information Technology Minor
College of Science and Engineering

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 17 to 19

This interdisciplinary minor requires at least 17 credits, including two core courses from the College of Science and Engineering, and three breadth courses from the Colleges of Liberal Arts or Design. The minor enables students in non-technical disciplines to supplement their major with a practical set of courses focused on information technology.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
At least 3 upper-division credits that satisfy requirements for the minor must be from University of Minnesota - Twin Cities.

Minor Courses
Preferred Sequence
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
CSCI 1001 - Overview of Computer Science [MATH, TS] (4.0 cr)

or Alternative sequence 1
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)

or Alternative sequence 2
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)

or Alternative sequence 3
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Breadth Courses
Some of the courses below have prerequisites or require instructor permission. Please see the course catalog or a Department of Computer Science and Engineering advisor for more information.
Take 3 or more course(s) from the following:
- COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
- COMM 3211 - Introduction to Media Studies (3.0 cr)
- COMM 4235 - Electronic Media and Ethnic Minorities--A World View (3.0 cr)
- COMM 4291 - New Telecommunication Media (3.0 cr)
- GDES 2342 - Web Design (3.0 cr)
- GDES 4371 - Data Visualization Studio (3.0 cr)
- GDES 5383 - Digital Illustration and Animation (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- JOUR 3004 - Information for Mass Communication (3.0 cr)
- JOUR 3551 - The Business of Digital Media: Innovation, Disruption, and Adaptation [TS] (3.0 cr)
- JOUR 3552 - Technology, Communication & Global Society [GP] (3.0 cr)
- JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
- JOUR 3776 - Mass Communication Law (3.0 cr)
Twin Cities Campus
Materials Science and Engineering B.Mat.S.E.
Chemical Engineering & Materials Science
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 121
- Required credits within the major: 100 to 101
- Degree: Bachelor of Materials Science and Engineering

The program in materials science and engineering leads to a bachelor's degree that enables students to immediately enter the profession. The program develops an understanding of the properties and the origin of these properties in a broad range of materials, including metals, ceramics, semiconductors, polymers, and composites. Because the program is broadly based, graduates find employment across a range of industries, including the automotive, chemical, electronics, energy, and medical technology industries. Graduates also find positions in consulting, research, technical management, and teaching.

The materials science and engineering (MSE) program is designed to prepare students to achieve the following career and professional accomplishments after graduation:
- Be employed as a materials engineer or a related engineering or science position, using and developing his or her skills based on the demands of the job.
- Enter into a graduate or professional program, applying his or her knowledge and experience toward an advanced or professional degree.
- Be an effective team member, using and developing communication and teamwork skills.
- Be a responsible engineer/scientist or professional, demonstrating ethical and professional responsibility and continuing to learn through formal and informal educational experiences.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Students interested in materials science and engineering are recommended to take MATS/CHEN 1001 to learn more about the field.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Principles of Chemistry I and lab
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)  
   or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)  
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)  
   or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Mathematics
MATH 1271 - Calculus I [MATH] (4.0 cr)  
   or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)  
   or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)  
MATH 1272 - Calculus II (4.0 cr)  
   or MATH 1372 - CSE Calculus II (4.0 cr)  
   or MATH 1572H - Honors Calculus II (4.0 cr)  
MATH 2263 - Multivariable Calculus (4.0 cr)  
   or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)  
   or MATH 2573H - Honors Calculus III (4.0 cr)  
   or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)

Physics
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Introduction to Materials Science and Engineering
MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All students in the College of Science and Engineering must complete CSE 1001, First Year Experience.

At least 22 upper division credits in the major must be taken at the University of Minnesota-Twin Cities campus.

Chemistry
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Major Courses
MATS 3001 - Thermodynamics of Materials (3.0 cr)
MATS 3002 - Mass Transport and Kinetics (3.0 cr)
MATS 3012 - Metals and Alloys (3.0 cr)
MATS 3013 - Electrical and Magnetic Properties of Materials (3.0 cr)
MATS 3141 - Numerical Methods for Materials Science (3.0 cr)
MATS 3801 - Structural Characterization Lab (4.0 cr)
MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
MATS 4212 - Ceramics (3.0 cr)
MATS 4221 - Materials Performance (4.0 cr)
MATS 4301W - Materials Processing [WI] (4.0 cr)
MATS 4400 - Senior Design Project (3.0 cr)
AEM 4511 - Mechanics of Composite Materials (3.0 cr)
CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
or PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
Complete the required mathematics course not used for admission to the program.
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)
MATS 4214 - Polymers (3.0 cr)
or CHEM 4214 - Polymers (3.0 cr)
or CHEN 4214 - Polymers (3.0 cr)

Statics/Dynamics
Students majoring in Materials Science and Engineering are required to take AEM 2031. Students may take AEM 2011/AEM 3031 with prior departmental approval.
AEM 2031 - Mechanics for Materials Engineers (3.0 cr)
or AEM 2011 - Statics (3.0 cr)
AEM 3031 - Deformable Body Mechanics (3.0 cr)
Technical Electives
Students must take 13 credits of technical electives.

The list below is not exhaustive; please see your advisor to discuss additional options. Up to 4 credits of MATS 4594 may count toward the 13 required technical elective credits.

Take 13 or more credit(s) from the following:
- AEM 4502 - Computational Structural Analysis (3.0 cr)
- AEM 4581 - Mechanics of Solids (3.0 cr)
- BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
- BBE 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products [ENV] (4.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BMEN 3011 - Biomechanics (3.0 cr)
- BMEN 5001 - Advanced Biomaterials (3.0 cr)
- BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
- BMEN 5201 - Advanced Biomechanics (3.0 cr)
- BMEN 5411 - Neural Engineering (3.0 cr)
- CE 3402 - Civil Engineering Materials (3.0 cr)
- CE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
- CE 3502 - Fluid Mechanics (4.0 cr)
- CE 4121 - Computer Applications II (3.0 cr)
- CE 4502 - Water and Wastewater Treatment (3.0 cr)
- CHEM 4201 - Materials Chemistry (3.0 cr)
- CHEM 4701 - Inorganic Chemistry (3.0 cr)
- CHEM 5755 - X-Ray Crystallography (4.0 cr)
- CHEN 2001 - Material and Energy Balances (4.0 cr)
- CHEN 5771 - Colloids and Dispersions (3.0 cr)
- EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
- EE 3006 - Fundamentals of Electrical Engineering Laboratory (1.0 cr)
- EE 3161 - Semiconductor Devices (3.0 cr)
- EE 5171 - Microelectronic Fabrication (4.0 cr)
- EE 5173 - Basic Microelectronics Laboratory (1.0 cr)
- EE 5657 - Physical Principles of Thin Film Technology (4.0 cr)
- ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
- IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
- IE 5441 - Financial Decision Making (4.0 cr)
- IE 5541 - Project Management (4.0 cr)
- MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
- MATS 4594 - Directed Research in Materials Science (1.0 - 3.0 cr)
- MATS 5517 - Microscopy of Materials (3.0 cr)
- MATS 5531 - Electrochemical Engineering (3.0 cr)
- ME 3221 - Fundamentals of Design & Manufacturing (4.0 cr)
- MM 3305 - Advanced 3D Printing for Innovative Business Practices (3.0 cr)
- PDES 3706 - Designing for Manufacture (4.0 cr)
- PDES 5701 - User-Centered Design Studio (3.0 cr)
- PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (4.0 cr)
- PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
- PHYS 5701 - Solid-State Physics for Engineers and Scientists (4.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)
- VPM 4131 - Immunology (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- MATS 5531 - Electrochemical Engineering (3.0 cr)
  or CHEN 5531 - Electrochemical Engineering and Renewable Energy (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
  or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
or CHEM 2312H - Honors Organic Lab (5.0 cr)
• PDES 3704 - Computer-Aided Design 1: Solid Modeling and Rendering (3.0 cr)
  or PDES 5704 - Computer-Aided Design Methods (3.0 cr)
• MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
  or CHEM 4223W - Polymer Laboratory [WI] (2.0 cr)
  or CHEN 4223W - Polymer Laboratory [WI] (2.0 cr)
• 1XXX level computer science
  Students may take one course from this group.
  • CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  or CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
  or CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
  or CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
  or CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
• MATS 4301W - Materials Processing [WI] (4.0 cr)
Twin Cities Campus
Mathematics B.S.Math.
School of Mathematics
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 71 to 93
- Degree: Bachelor of Science in Mathematics

The mission of the program is to provide high-quality mathematics instruction in a stimulating intellectual atmosphere. The goal is to educate students at all levels to provide cultural enrichment, to give them the analytic tools they need to become responsible citizens, and to prepare them for careers involving mathematics.

The School of Mathematics offers a program leading to the bachelor of science degree. The course of study is flexible and may be adapted to satisfy a wide variety of interests and needs. Students may prepare for graduate study in mathematics or emphasize various fields of interest, such as preparation for secondary school teaching, actuarial science, or programs in applied mathematics, including industrial mathematics, biology, mathematics applicable to computer science, and numerical analysis.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 5 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Successful completion of five (5) courses is required for admission to upper division as a math major: three (3) calculus courses: Calculus I (1371/1271/1571H), Calculus II (1372/1272/1572H), and one 2xxx level Calculus course - either Linear Algebra & Differential Equations (2373/2243/2574H/3592H) or Multivariable Calculus (2374/2263/2573H/3593H) - plus two (2) Calculus-based Physics courses (see list below).

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Calculus Sequence
CSE Calculus Sequence
- Either MATH 2373 Linear Algebra & Differential Equations (here) or MATH 2374 Multivariable Calculus (see program requirements) can be taken to meet the requirement for admission to upper division.

Calculus I
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1372 - CSE Calculus II (4.0 cr)
- or MATH 1272 - Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)

2xxx Level Calculus Course
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- or MATH 2263 - Multivariable Calculus (4.0 cr)

or 2xxx or 3xxx Level Honors Calculus Course
- MATH 2574H - Honors Calculus IV (4.0 cr)
- or MATH 3592H - Honors Mathematics I (5.0 cr)

Physics
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
or PHYS 1501V (Inactive) [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
or PHYS 1502V (Inactive) [PHYS, WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must complete eight (8) upper division math courses at 4xxx and above plus a computer science course (see list below) and two (2) technical elective courses at the 3xxx level or above with the prerequisite of Calculus I. The School of Mathematics will accept STAT 5101 and 5102 as part of the eight-course upper division mathematics requirement. The content of STAT 5101 is the same as MATH 5651. STAT 5102 does not fulfill the analysis requirement. No other courses from other departments may be used as part of the eight-course math requirement, although other courses may be used as technical electives.

MATH 3113, 3116, 3118, 4113, 4116, 4118, 3283W, 4005, 4067W, 49xx and 59xx math courses neither satisfy upper division math course requirement nor the technical electives requirement.

In addition to the specializations described below, students who wish to pursue a pure mathematics track or are planning to go to graduate school in mathematics should consult their advisor about appropriate course choices.

All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

Remaining Required Lower Division Calculus Courses
2xxx Level Calculus Course
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or 2xxx or 3xxx Level Honors Calculus Course
MATH 2573H - Honors Calculus III (4.0 cr)
or MATH 3593H - Honors Mathematics II (5.0 cr)

Sequences, Series, & Foundations
MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
or MATH 2283 - Sequences, Series, and Foundations (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4067W - Actuarial Mathematics in Practice [WI] (3.0 cr)
• MATH 4997W - Senior project (Writing Intensive) [WI] (1.0 cr)

Specializations in Mathematics
Mathematics (No Specialization)
Students who do not choose one of the specializations must complete the basic mathematics major course requirements listed here.

For the technical electives requirement, students must take at least 6 credits of courses that meet the following criteria: prerequisite of calculus; 3xxx level or higher; courses form a coherent part of the student's program.

Algebra Requirement
Both courses can be from the theoretical algebra list.
Take 2 or more course(s) from the following:
Theoretical Algebra
Take 1 or more course(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Further Discrete or Algebraic Math Courses
Take 0 or more course(s) from the following:
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5335 - Geometry I (4.0 cr)
• MATH 5345H - Honors: Introduction to Topology (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)

Analysis Requirement
Take 2 or more course(s) from the following:
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5445 - Geometry I (4.0 cr)
• MATH 5447 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5449 - Theory of Statistics I (4.0 cr)
• MATH 5467 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5598 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)

Upper Division Math or Math-Related Courses
Take 4 or more course(s) totaling 14 or more credit(s) from the following:
• MATH 4065 - Theory of Interest (4.0 cr)
• MATH 4152 - Elementary Mathematical Logic (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 4653 - Elementary Probability (4.0 cr)
• MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
• MATH 5067 - Actuarial Mathematics I (4.0 cr)
• MATH 5068 - Actuarial Mathematics II (4.0 cr)
• MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
• MATH 5076 - Mathematics of Options, Futures, and Derivative Securities II (4.0 cr)
• MATH 5165 - Mathematical Logic I (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5335 - Geometry I (4.0 cr)
• MATH 5345H - Honors: Introduction to Topology (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)

Computer Science Requirement
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

Third Semester Physics Requirement
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
or
PHYS 2311 - Modern Physics (4.0 cr)
or
PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)

Technical Electives Requirement
Any mathematics, science, or engineering course of technical nature that is not listed below and is not already used to fulfill specific BS mathematics requirements may be used as a technical elective course by permission. Contact the MATH director of undergraduate studies.

Chemistry Technical Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
• CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
or
Chemical Engineering/Material Science Technical Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CHEN 3101 - Chemical Engineering Thermodynamics (4.0 cr)
• CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)

Computer Science Technical Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4061 - Introduction to Operating Systems (4.0 cr)
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 5106 - Programming Languages (3.0 cr)
• CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
• CSCI 5403 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
or
Physics Technical Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• PHYS 4001 - Analytical Mechanics (4.0 cr)
• PHYS 4002 - Electricity and Magnetism (4.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
• PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
• PHYS 5001 - Quantum Mechanics I (4.0 cr)
or
Economics Technical Electives
ECON 3101 - Intermediate Microeconomics (4.0 cr)

Additional Economics Technical Elective Course
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ECON 3102 - Intermediate Macroeconomics (4.0 cr)
-ECON 4261 - Introduction to Econometrics (4.0 cr)
-ECON 4751 - Financial Economics (3.0 cr)

or Statistics Technical Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
-STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
-STAT 3022 - Data Analysis (4.0 cr)
-STAT 3701 - Introduction to Statistical Computing (4.0 cr)
-STAT 5021 - Statistical Analysis (4.0 cr)
-STAT 5031 [Inactive] (4.0 cr)
-STAT 5302 - Applied Regression Analysis (4.0 cr)
-STAT 5303 - Designing Experiments (4.0 cr)
-STAT 5421 - Analysis of Categorical Data (3.0 cr)

or Mathematics Technical Electives
Courses from the algebra, analysis, and mathematics electives lists which have not already used to fulfill those requirements may be taken to fulfill the technical elective requirement.
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
-MATH 4xxx
-MATH 5xxx
-STAT 5101 - Theory of Statistics I (4.0 cr)
-STAT 5102 - Introduction to Statistical Learning (4.0 cr)

-OR-

Actuarial Specialization
Complete the requirements for the actuarial sub-plan.

-OR-

Mathematics Education Specialization
Complete the requirements for the mathematics education sub-plan.

-OR-

Computer Applications Specialization
Complete the requirements for the computer applications sub-plan.

-OR-

Mathematical Biology: Genomics
Complete the requirements for the genomics sub-plan.

-OR-

Mathematical Biology: Physiology
Complete the requirements for the physiology sub-plan.

Program Sub-plans
A sub-plan is not required for this program.

Actuarial Science
The BS mathematics with actuarial specialization requires a minimum of 8 upper division (4xxx level and above) mathematics courses, as indicated in the lists below. Students pursuing the actuarial specialization may want to include MATH 4067W, which fulfills an upper division writing intensive requirement, although it does not fulfill any of the upper division math course requirements. It is recommended in this specialization to plan for a summer internship after the junior year.

For the actuarial specialization, students must complete specific courses in economics, accounting, finance, insurance, and statistics. Thus, the required courses in these disciplines take the place of a technical electives package for students who successfully complete the actuarial specialization.

A third semester of physics is not required for the actuarial specialization.

Mathematics Course Requirements
Algebra
- Theoretical Algebra
  Take 1 or more course(s) from the following:
  -MATH 4281 - Introduction to Modern Algebra (4.0 cr)
  -MATH 5248 - Cryptology and Number Theory (4.0 cr)
  -MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

**Applied Algebra**
- MATH 4242 - Applied Linear Algebra (4.0 cr)

**Analysis for Actuarial Specialization**

**Theory of Probability & Statistics**
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)

**Stochastic Processes**
- MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

**Actuarial Mathematics**
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
- MATH 5068 - Actuarial Mathematics II (4.0 cr)

**Upper Division Math Elective for Actuarial Courses**
Courses recommended for this specialization are MATH 5075, 4428, 5485, 5076.

4xxx or 5xxx Level Math Courses offered in Fall
Take 1 or more course(s) from the following:
- MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
- MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
- MATH 4xxx
- MATH 5xxx

4xxx or 5xxx Level Math Courses offered in Spring
Take 1 or more course(s) from the following:
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4xxx
- MATH 5xxx

**Computer Science Requirement**
- CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
  or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

**Introductory Economics & Business**
Introductory Economics and Business courses are the same for both the Statistics & Insurance and the Economics & Insurance tracks.
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)

**Statistics & Insurance or Economics & Insurance**
Choose an emphasis in Statistics & Insurance or in Economics and Insurance.

**Statistics and Insurance**
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- STAT 3032 - Regression and Correlated Data (4.0 cr)
- STAT 5102 - Introduction to Statistical Learning (4.0 cr)

**Insurance**
Take 1 or more courses.
Take 1 or more course(s) from the following:
- INS 4100 - Corporate Risk Management (2.0 cr)
- INS 4101 - Employee Benefits (2.0 cr)
- INS 4200 - Insurance Theory and Practice (2.0 cr)

**Economics & Insurance**
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 4261 - Introduction to Econometrics (4.0 cr)

**Insurance**
Take 2 or more courses.
Take 2 or more course(s) from the following:
- INS 4100 - Corporate Risk Management (2.0 cr)
- INS 4101 - Employee Benefits (2.0 cr)
- INS 4200 - Insurance Theory and Practice (2.0 cr)

**Computer Applications**
The upper division (4xxx level or above) mathematics courses, a 3rd semester of physics, and a minimum 24 credits of math and computer science courses relating to computer applications (from the courses listed below) are needed to fulfill the requirements for the BS mathematics with computer applications specialization. Students who complete the computer applications specialization may meet the requirements for a minor in computer science.
Mathematics Course Requirements for Computer Applications

Algebra Requirements

Theoretical Algebra
Take 1 or more course(s) from the following:
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra
MATH 5485 - Introduction to Numerical Methods I (4.0 cr)

Analysis Requirements

Numerical Methods
MATH 5486 - Introduction To Numerical Methods II (4.0 cr)

Additional Analysis Course
Take 1 or more course(s) from the following:
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 4603 - Advanced Calculus I (4.0 cr)
- MATH 4604 - Advanced Calculus II (4.0 cr)
- MATH 5378 - Differential Geometry (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
- MATH 5553 - Complex Analysis (4.0 cr)
- MATH 5557 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5558 - Elementary Partial Differential Equations II (4.0 cr)
- MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
- MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
- MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
- MATH 5654 - Prediction and Filtering (4.0 cr)
- STAT 5101 - Theory of Statistics I (4.0 cr)

Mathematics Electives
Mathematics courses in the algebra, analysis, or computing-related mathematics lists which are not used to fulfill those requirements may be taken as mathematics elective courses.
Take 2 or more course(s) from the following:
- MATH 4xxx
- MATH 5xxx

Computing-Related Mathematics

Mathematical Logic
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- MATH 5165 - Mathematical Logic I (4.0 cr)

Computer-Related Mathematics Electives
Take 1 or more course(s) from the following:
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 5166 - (Inactive) (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
- MATH 5705 - Enumerative Combinatorics (4.0 cr)
- MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
- MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)

Introductory Computer Science

Computing and Programming Concepts
Take 1 or more course(s) from the following:
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)

Take 1 or more course(s) from the following:
• CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
• CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)

**or Computer Programming**

CSCI 1913 - Introduction to Programming in Java or C/C++

Take 1 or more course(s) from the following:
• CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)

**Discrete Structures**

CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)

**Computer Science Courses & Technical Electives**

Upper division computer science courses may be counted as technical electives. Take 2 or more course(s) from the following:
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)

**Third Semester Physics Requirement**

A physics course from the following list should be taken during the the second year to fulfill this requirement.

PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
or PHYS 2311 - Modern Physics (4.0 cr)
or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)

**Mathematics Education**

Preparation for teaching mathematics in secondary education.

The eight (8) required upper division (4xxx level or above) mathematics courses for the mathematics education specialization include courses that meet admission requirements for the secondary teaching licensure program in mathematics. Additional requirements for the BS mathematics with mathematics education specialization include a 3rd semester of physics, a minimum of one (1) computer science course, and a technical electives course package.

MATH 4653 is recommended to meet admission requirements for the Math Education Licensure Program, but it does not fulfill the analysis requirement for the major.

Courses that are recommended for this specialization (but not required) include MATH 5652 Stochastic Processes, STAT 5102 Theory of Statistics II, and MATH 5336 Geometry II.

**Mathematics Education Specialization Requirements**

**Algebra Requirements**

**Theoretical Algebra**

MATH 4281 - Introduction to Modern Algebra (4.0 cr)

or MATH 5248 - Cryptology and Number Theory (4.0 cr)

or MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)

or MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)

**Applied Algebra: Combinatorics**

Note: MATH 4707 fulfills the applied algebra requirements only for the mathematics education specialization.

MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)

or MATH 5705 - Enumerative Combinatorics (4.0 cr)

or MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)

**Geometry**

MATH 5335 - Geometry I (4.0 cr)

**Probability and Statistics**

MATH 4653 - Elementary Probability (4.0 cr)

or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

or STAT 5101 - Theory of Statistics I (4.0 cr)

**Analysis Requirements**

Take 2 or more course(s) from the following:

• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• STAT 5101 - Theory of Statistics I (4.0 cr)

Mathematics Education Electives Requirement
Recommended math elective courses for this specialization are MATH 5336, MATH 4242, MATH 5652, STAT 5102. Courses from the algebra or analysis lists not used to fulfill those requirements may also be taken to fulfill this math electives requirement. Take 2 or more course(s) from the following:
• MATH 4xxx
• MATH 5xxx
• STAT 5102 - Introduction to Statistical Learning (4.0 cr)
• MATH 5336 (Inactive) (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

Computer Science Requirement
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

Third Semester Physics Requirement
Take one of the following physics courses in the third semester (fall semester of the second year).
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
or PHYS 2311 - Modern Physics (4.0 cr)
or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)

Technical Electives Courses
Students must complete 6 credits of courses at the 3xxx level or above which have Calculus I (1271, 1371, 1571H) as a prerequisite and which form a coherent part of student's program. Technical electives are selected by consultation and approval of your math advisor. Earliest semester: Y3 fall; latest semester: Y4 spring.

Chemistry
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
• CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
or Chemical Engineering
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)

or Computer Science Technical Elective Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4061 - Introduction to Operating Systems (4.0 cr)
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 5106 - Programming Languages (3.0 cr)
• CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
• CSCI 5403 (Inactive) (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5607 - Fundamentals of Computer Graphics 1 (3.0 cr)
• CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
or Physics Technical Elective Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (4.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
- PHYS 4101 - Quantum Mechanics (4.0 cr)
- PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
- PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
- PHYS 5001 - Quantum Mechanics I (4.0 cr)

or Economics Technical Electives Courses

ECON 3101 - Intermediate Microeconomics (4.0 cr)
Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
- ECON 4261 - Introduction to Econometrics (4.0 cr)
- ECON 4751 - Financial Economics (3.0 cr)

or Statistics Technical Electives Courses

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)
- STAT 3701 - Introduction to Statistical Computing (4.0 cr)
- STAT 5021 - Statistical Analysis (4.0 cr)
- STAT 5031 - Introduction to Statistical Computing (4.0 cr)
- STAT 5302 - Applied Regression Analysis (4.0 cr)
- STAT 5303 - Designing Experiments (4.0 cr)
- STAT 5421 - Analysis of Categorical Data (3.0 cr)

or Mathematics Courses for Technical Electives

Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- MATH 4xxx
- MATH 5xxx

Mathematical Biology: Genomics

Note that some genomics elective choices have additional prerequisite courses. A third semester of physics is not required for the mathematical biology: genomics specialization.

Mathematics Requirements for MathBio: Genomics
Mathematical Modeling Requirement
- MATH 4428 - Mathematical Modeling (4.0 cr)

Algebra Requirements
Theoretical Algebra

Take 1 or more course(s) from the following:

- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra
- MATH 4424 - Applied Linear Algebra (4.0 cr)

Analysis Requirements
Genomics Analysis Requirement

Take 1 or more course(s) from the following:

- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5535 - Dynamical Systems and Chaos (4.0 cr)

Theory of Probability & Statistics I
- MATH 5561 - Basic Theory of Probability and Statistics (4.0 cr)
- STAT 5101 - Theory of Statistics I (4.0 cr)

Mathematics Electives

Mathematics courses from the algebra, analysis, and genomics electives lists which were not used to fulfill those requirements may be taken as mathematics electives to meet the 8 course requirement for the major.

Take 3 or more course(s) from the following:

- MATH 4xxx
- MATH 5xxx

Computer Science Requirements for Genomics
Introduction to Computing and Programming Concepts

Take 1 or more course(s) from the following:

- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• CSCI 1133H - Honors Introduction to Computing and Programming Concepts (4.0 cr)
Take 1 or more course(s) from the following:
• CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
• CSCI 1933H - Honors Introduction to Algorithms and Data Structures (4.0 cr)

or Introduction to Computer Programming
• CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)

5xxx Level CSCI Course Requirements
CSCI 2011 & CSCI 4041 may together serve as the substitute prerequisite courses for CSCI 5461.

Functional Genomics, Systems Biol., Bioinformatics
CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
CSCI 3003 - Introduction to Computing in Biology (3.0 cr)

or Computational Techniques for Genomics
CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
CSCI 4041 - Algorithms and Data Structures (4.0 cr)
CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)

Genomics Genetics, Biology Requirements
MATH 5445 may only count if it is not counting towards another sub-plan requirement.

General Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)

or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Genetics
GCD 3022 - Genetics (3.0 cr)

Genomics Elective
If the genomics elective course chosen does not require a chemistry sequence, then it is still recommended that one semester of chemistry is taken (CHEM 1061 & CHEM 1065 Lab). The 5xxx level CSCI course which was not taken to fulfill the computer science requirement may (with its prerequisites) be used to fulfill the genomics elective requirement. GCD 4151 has these prerequisite courses: CHEM 1061, CHEM 1065 (lab), CHEM 1062, CHEM 1066 (lab), CHEM 2301; BIOC 3021; BIOL 4003.
Take 1 or more course(s) from the following:
• EEB 5042 - Quantitative Genetics (3.0 cr)
• GCD 4143 - Human Genetics and Genomics (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)

Mathematical Biology: Physiology
Note that some physiology elective choices have additional prerequisite courses. A third semester of physics is not required for the mathematical biology: physiology specialization.

Mathematics Requirements for MathBio: Physiology
Mathematical Modeling Requirement
MATH 4428 - Mathematical Modeling (4.0 cr)

Biological Networks or Neuroscience
MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)

or MATH 5447 - Theoretical Neuroscience (4.0 cr)

Theoretical Algebra
Take 1 or more course(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra Requirement
MATH 4242 - Applied Linear Algebra (4.0 cr)

Analysis Requirements
Physiology Analysis Requirement
Take 1 or more course(s) from the following:
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)

Theory of Probability & Statistics
MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

or STAT 5101 - Theory of Statistics I (4.0 cr)

Mathematics Electives
Mathematics courses from the algebra, analysis or required mathematics for physiology lists which were not used to fulfill those
requirements may be used to fulfill this requirement.
Take 2 or more course(s) from the following:
• MATH 4xxx
• MATH 5xxx

Lower Division Computer Science Requirement
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

Physiology, Biology, Chemistry Requirements

Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Chemistry
Chemical Principles I
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Chemical Principles II
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Physiology Requirement
PHSL 3061 - Principles of Physiology (4.0 cr)

Physiology Electives
MATH 5445 or MATH 5447 may only count if it is not already counting towards another sub-plan requirement. Some of these courses may have additional prerequisites. NSC 5202 has the following prerequisites: CHEM 2301, BIOC 3021, NSCI 3101, NSCI 3102.
Take 1 or more course(s) from the following:
• PHSL 4702 - Cell Physiology (3.0 cr)
• PHSL 5444 - Muscle (3.0 cr)
• NSC 5202 - Theoretical Neuroscience: Systems and Information Processing (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
Twin Cities Campus
Mechanical Engineering B.M.E.
Mechanical Engineering
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 124
- Required credits within the major: 108 to 110
- The co-operative work training option to the program requires two or three semesters of supervised work at a corporate host site.
- Degree: Bachelor of Mechanical Engineering

The Department of Mechanical Engineering is committed to offering undergraduate and graduate education of the highest quality in mechanical engineering, to conducting significant basic and applied research in selected areas, and to providing professional service to the appropriate constituencies of a major land grant university.

Mechanical engineering is involved in most technological activities of society and dominates many, including automotive, transportation, materials handling, environmental and pollution control systems, refrigeration and cryogenics, power systems design, automation, system dynamics and control, computer-aided design and manufacturing, capital equipment design, and consumer products production. A mechanical engineer may be engaged in design, development, research, testing, manufacturing, administration, marketing, consulting, or education.

The program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Mathematics
Honors math (MATH 1571H, 1572H, 2573H, 2574H) may be taken in place of the listed courses.
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)

Physical Sciences
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Statics and Dynamics
AEM 2021 - Statics and Dynamics (4.0 cr)
or take the following course pair
AEM 2011 - Statics (3.0 cr)
AEM 2012 - Dynamics (3.0 cr)
Material or Thermal Science
MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Linear Algebra & Differential Equations
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)

Major Courses
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
MATS 2002 - Introduction to the Science of Engineering Materials Laboratory (1.0 cr)
AEM 3031 - Deformable Body Mechanics (3.0 cr)
EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
EE 3006 - Fundamentals of Electrical Engineering Laboratory (1.0 cr)
IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
ME 2011 - Introduction to Engineering (4.0 cr)
ME 3221 - Fundamentals of Design & Manufacturing (4.0 cr)
ME 3222 - Mechanisms & Machine Design (4.0 cr)
ME 3281 - System Dynamics and Control (4.0 cr)
ME 3332 - Fluid Mechanics (3.0 cr)
ME 3333 - Heat Transfer (3.0 cr)
ME 4031W - Basic Mechanical Measurements Laboratory [WI] (4.0 cr)
ME 4054W - Design Projects [WI] (4.0 cr)
ME 4053 - Mechanical Engineering Modeling (4.0 cr)
MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

Major Course Elective
ME 4131W - Thermal Environmental Engineering Laboratory [WI] (4.0 cr)
or ME 4231 - Motion Control Laboratory (4.0 cr)
or ME 4232 - Fluid Power Control Lab (4.0 cr)
or ME 4331 - Thermal Energy Engineering Laboratory (4.0 cr)
or ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)

ME Technical Electives
Complete 8 ME technical elective credits.
Take 8 or more credit(s) from the following:
Environmental
Take 0 or more credit(s) from the following:
• ME 5101 - Vapor Power Cycles (4.0 cr)
• ME 5103 - Thermal Environmental Engineering (4.0 cr)
• ME 5113 - Aerosol/Particle Engineering (4.0 cr)
• ME 5133 - Aerosol Measurement Laboratory (4.0 cr)
• ME 5312 - Solar Thermal Technologies (4.0 cr)

• Design & Manufacturing
Take 0 or more credit(s) from the following:
• ME 5221 - Computer-Assisted Product Realization (4.0 cr)
• ME 5223 - Materials in Design (4.0 cr)
• ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• ME 5241 - Computer-Aided Engineering (4.0 cr)
• ME 5243 - Advanced Mechanism Design (4.0 cr)
• ME 5247 - Stress Analysis, Sensing, and Transducers (4.0 cr)
• ME 5248 - Vibration Engineering (4.0 cr)
• ME 5281 - Feedback Control Systems (4.0 cr)
• ME 5286 - Robotics (4.0 cr)
• **Thermal Sciences**  
  (Power & Propulsion, Thermodynamics, Heat Transfer, Fluid Mechanics)  
  Take 0 or more credit(s) from the following:  
  • ME 5101 - Vapor Power Cycles (4.0 cr)  
  • ME 5312 - Solar Thermal Technologies (4.0 cr)  
  • ME 5332 - Intermediate Fluid Mechanics (3.0 cr)  
  • ME 5341 - Case Studies in Thermal Engineering and Design (4.0 cr)  
  • ME 5344 - Thermodynamics of Fluid Flow With Applications (4.0 cr)  
  • ME 5351 - Computational Heat Transfer (4.0 cr)  
  • ME 5446 - Introduction to Combustion (4.0 cr)  
  • ME 5461 - Internal Combustion Engines (4.0 cr)  
  • ME 5462 - Gas Turbines (4.0 cr)  
  • ME 5666 - Modern Thermodynamics (4.0 cr)  

• **ME EIP**  
  Students in the ME EIP program are required to include ME 3041 and 4043W in their technical electives. ME 4044 is strongly recommended.  
  • ME 3041 - Industrial Assignment I (2.0 cr)  
  • ME 4043W - Industrial Assignment II [WI] (4.0 cr)  
  • ME 4044 - Industrial Assignment III (2.0 cr)  

**Specialization Elective**  
The specialization elective is any 3 or 4 credit class offered at the University of Minnesota at the 3XXX level or above which (1) complements your career goals in mechanical engineering in some way, (2) is substantive, (3) has content which is not overly redundant with any of your other classes, and (4) is not being used to fulfill a liberal education core or theme requirement.  
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:  
• AEM 4202 - Aerodynamics (4.0 cr)  
• AEM 4203 - Aerospace Propulsion (4.0 cr)  
• AEM 4247 - Hypersonic Aerodynamics (3.0 cr)  
• AEM 4253 - Computational Fluid Mechanics (3.0 cr)  
• AEM 4301 - Orbital Mechanics (3.0 cr)  
• AEM 4303W - Flight Dynamics and Control [WI] (3.0 cr)  
• AEM 4305 - Spacecraft Attitude Dynamics and Control (3.0 cr)  
• AEM 4501 - Aerospace Structures (3.0 cr)  
• AEM 4502 - Computational Structural Analysis (3.0 cr)  
• AEM 4511 - Mechanics of Composite Materials (3.0 cr)  
• AEM 4581 - Mechanics of Solids (3.0 cr)  
• AEM 5247 - Hypersonic Aerodynamics (3.0 cr)  
• AEM 5253 - Computational Fluid Mechanics (3.0 cr)  
• AEM 5321 - Modern Feedback Control (3.0 cr)  
• AEM 5401 - Intermediate Dynamics (3.0 cr)  
• AEM 5451 - Optimal Estimation (3.0 cr)  
• AEM 5501 - Continuum Mechanics (3.0 cr)  
• AEM 5503 - Theory of Elasticity (3.0 cr)  
• AEM 5581 - Mechanics of Solids (3.0 cr)  
• AEM 5651 - Aeroelasticity (3.0 cr)  
• BBE 4013 - Transport in Biological Processes II (3.0 cr)  
• BBE 4301 - Applied Surface and Colloid Science (3.0 cr)  
• BBE 4333 - Off-road Vehicle Design (4.0 cr)  
• BBE 4523 - Ecological Engineering Design (3.0 cr)  
• BBE 4533 - Sustainable Waste Management Engineering (3.0 cr)  
• BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)  
• BBE 4713 - Biological Process Engineering (3.0 cr)  
• BBE 4723 - Food Process Engineering (3.0 cr)  
• BBE 5001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products (4.0 cr)  
• BBE 5301 - Applied Surface and Colloid Science (3.0 cr)  
• BBE 5302 - Biodegradation of Bioproducts (3.0 cr)  
• BBE 5303 - Introduction to Bio-based Materials Science (3.0 cr)  
• BBE 5305 - Pulp and Paper Technology (3.0 cr)  
• BBE 5333 - Off-road Vehicle Design (4.0 cr)  
• BBE 5404 - Biopolymers and Biocomposites Engineering (3.0 cr)  
• BBE 5608 - Environmental and Industrial Microbiology (3.0 cr)  
• BBE 5713 - Biological Process Engineering (3.0 cr)  
• BBE 5723 - Food Process Engineering (3.0 cr)  
• BBE 5733 - Renewable Energy Technologies (3.0 cr)  
• BBE 5743 - Nanobioengineering & Nanobiotechnology (3.0 cr)
• BBE 5753 - Air Quality and Pollution Control Engineering (3.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• BMEN 5111 - Biomedical Ultrasound (3.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
• BMEN 5321 - Microfluidics in Biology and Medicine (3.0 cr)
• BMEN 5351 - Cell Engineering (3.0 cr)
• BMEN 5401 - Advanced Biomedical Imaging (3.0 cr)
• BMEN 5411 - Neural Engineering (3.0 cr)
• BMEN 5412 - Neuromodulation (3.0 cr)
• BMEN 5413 - Neural Decoding and Interfacing (3.0 cr)
• BMEN 5421 - Introduction to Biomedical Optics (3.0 cr)
• BMEN 5501 - Biology for Biomedical Engineers (3.0 cr)
• BMEN 5701 - Cancer Bioengineering (3.0 cr)
• CEGE 4121 - Computer Applications II (3.0 cr)
• CEGE 4311 - Rock Mechanics (4.0 cr)
• CEGE 4351 - Groundwater Mechanics (3.0 cr)
• CEGE 4352 - Groundwater Modeling (3.0 cr)
• CEGE 4401 - Steel and Reinforced Concrete Design (4.0 cr)
• CEGE 4411 - Matrix Structural Analysis (3.0 cr)
• CEGE 4412 - Reinforced Concrete II (3.0 cr)
• CEGE 4413 - Steel Design II (3.0 cr)
• CEGE 4501 - Hydrologic Design (4.0 cr)
• CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
• CEGE 4511 - Hydraulic Structures (3.0 cr)
• CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5213 - Transit Planning and Management (3.0 cr)
• CEGE 5253 - [Inactive] (4.0 cr)
• CEGE 5351 - Advanced Engineering Mathematics I (3.0 cr)
• CEGE 5411 - Applied Structural Mechanics (3.0 cr)
• CEGE 5414 - Prestressed Concrete Design (3.0 cr)
• CEGE 5415 - Masonry Structures (3.0 cr)
• CEGE 5511 - Urban Hydrology and Water Quality (4.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)
• CEGE 5542 - Experimental Methods in Environmental Engineering (3.0 cr)
• CEGE 5543 - Introductory Environmental Fluid Mechanics (4.0 cr)
• CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products (4.0 cr)
• CHEM 4011 - Mechanisms of Chemical Reactions (3.0 cr)
• CHEM 4021 - Computational Chemistry (3.0 cr)
• CHEM 4066 - Chemistry of Industry (3.0 cr)
• CHEM 4201 - Materials Chemistry (3.0 cr)
• CHEM 4214 - Polymers (3.0 cr)
• CHEM 4221 - Introduction to Polymer Chemistry (3.0 cr)
• CHEM 4301 - Applied Surface and Colloid Science (3.0 cr)
• CHEM 4321 - Organic Synthesis (3.0 cr)
• CHEM 4322 - Advanced Organic Chemistry (3.0 cr)
• CHEM 4352 - Physical Organic Chemistry (3.0 cr)
• CHEM 4361 - Interpretation of Organic Spectra (3.0 cr)
• CHEM 4411 - Introduction to Chemical Biology (3.0 cr)
• CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
• CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
• CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
• CHEM 4511W - Advanced Physical Chemistry Lab [WI] (3.0 cr)
• CHEM 4701 - Inorganic Chemistry (3.0 cr)
• CHEM 4715 - Physical Inorganic Chemistry (3.0 cr)
• CHEM 4725 - Organometallic Chemistry (3.0 cr)
• CHEM 4735 - Bioinorganic Chemistry (3.0 cr)
• CHEM 4745 - Advanced Inorganic Chemistry (3.0 cr)
• CHEM 5210 - Materials Characterization (4.0 cr)
• CHEM 5245 - Introduction to Drug Design (3.0 cr)
• CHEM 5755 - X-Ray Crystallography (4.0 cr)
• CHEM 3701 - Introduction to Biomolecular Engineering (3.0 cr)
• CHEN 4501W - Chemical Engineering Design [WI] (4.0 cr)
• CHEN 4601 - Process Control (3.0 cr)
• CHEN 4701 - Applied Math (3.0 cr)
• CHEN 4704 - Advanced Undergraduate Physical Rate Processes I: Transport (3.0 cr)
• CHEN 4707 - Advanced Undergraduate Statistical Thermodynamics and Kinetics (3.0 cr)
• CHEN 5531 - Electrochemical Engineering and Renewable Energy (3.0 cr)
• CHEN 5751 - Biochemical Engineering (3.0 cr)
• CHEN 5753 - Advanced Biomedical Transport Processes (3.0 cr)
• CHEN 5771 - Colloids and Dispersions (3.0 cr)
• CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
• CSCI 4041 - Algorithms and Data Structures (4.0 cr)
• CSCI 4041H [Inactive] (4.0 cr)
• CSCI 4061 - Introduction to Operating Systems (4.0 cr)
• CSCI 4131 - Internet Programming (3.0 cr)
• CSCI 4203 - Computer Architecture (4.0 cr)
• CSCI 4211 - Introduction to Computer Networks (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• CSCI 5103 - Operating Systems (3.0 cr)
• CSCI 5105 - Introduction to Distributed Systems (3.0 cr)
• CSCI 5106 - Programming Languages (3.0 cr)
• CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
• CSCI 5117 - Developing the Interactive Web (3.0 cr)
• CSCI 5123 - Recommender Systems (3.0 cr)
• CSCI 5143 - Real-Time and Embedded Systems (3.0 cr)
• CSCI 5161 - Introduction to Compilers (3.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)
• CSCI 5211 - Data Communications and Computer Networks (3.0 cr)
• CSCI 5221 - Foundations of Advanced Networking (3.0 cr)
• CSCI 5231 - Wireless and Sensor Networks (3.0 cr)
• CSCI 5271 - Introduction to Computer Security (3.0 cr)
• CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
• CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
• CSCI 5403 [Inactive] (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
• CSCI 5471 - Modern Cryptography (3.0 cr)
• CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
• CSCI 5511 - Artificial Intelligence I (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)
• CSCI 5525 - Machine Learning (3.0 cr)
• CSCI 5552 - Sensing and Estimation in Robotics (3.0 cr)
• CSCI 5561 - Computer Vision (3.0 cr)
• CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
• CSCI 5609 - Visualization (3.0 cr)
• CSCI 5611 - Animation & Planning in Games (3.0 cr)
• CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)
• CSCI 5707 - Principles of Database Systems (3.0 cr)
• CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
• CSCI 5715 - From GPS and Virtual Globes to Spatial Computing (3.0 cr)
• CSCI 5801 - Software Engineering I (3.0 cr)
• CSCI 5802 - Software Engineering II (3.0 cr)
• EE 3161 - Semiconductor Devices (3.0 cr)
• EE 3601 - Transmission Lines, Fields, and Waves (3.0 cr)
• EE 4111 - Advanced Analog Electronics Design (4.0 cr)
• EE 4301 - Digital Design With Programmable Logic (4.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)
• EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• EE 4389W - Introduction to Predictive Learning [WI] (3.0 cr)
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- ESCI 5402 - Science and Politics of Global Warming (3.0 cr)
- ESCI 5502 [inactive] (3.0 cr)
- ESCI 5503 - Advanced Petrology (3.0 cr)
- ESCI 5504W [inactive] (3.0 cr)
- ESCI 5501W [inactive] (4.0 cr)
- ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
- HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)
- HSCI 5246 - History of (Un)Natural Disasters (3.0 cr)
- HSCI 5331 - Technology and American Culture (3.0 cr)
- HSCI 5332 - Science in the Shaping of America (3.0 cr)
- HSCI 5401 - Ethics in Science and Technology (3.0 cr)
- HSCI 5421 - Engineering Ethics (3.0 cr)
- HSCI 5611 - Enlightenment, Revolution, and the Rise of Modern Science (3.0 cr)
- IE 5511 - Human Factors and Work Analysis (4.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)
- IE 5522 - Quality Engineering and Reliability (4.0 cr)
- IE 5531 - Engineering Optimization I (4.0 cr)
- IE 5532 - Stochastic Models (4.0 cr)
- IE 5541 - Project Management (4.0 cr)
- IE 5551 - Production Planning and Inventory Control (4.0 cr)
- IE 5553 - Simulation (4.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4151 - Elementary Set Theory (3.0 cr)
- MATH 4152 - Elementary Mathematical Logic (3.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 4603 - Advanced Calculus I (4.0 cr)
- MATH 4604 - Advanced Calculus II (4.0 cr)
- MATH 4653 - Elementary Probability (4.0 cr)
- MATH 4707 - Introduction to Combinatorics and Graph Theory (4.0 cr)
- MATH 5165 - Mathematical Logic I (4.0 cr)
- MATH 5166 [inactive] (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
- MATH 5335 - Geometry I (4.0 cr)
- MATH 5336 [inactive] (4.0 cr)
- MATH 5345H - Honors: Introduction to Topology (4.0 cr)
- MATH 5378 - Differential Geometry (4.0 cr)
- MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
- MATH 5583 - Complex Analysis (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
- MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
- MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
- MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
- MATH 5654 - Prediction and Filtering (4.0 cr)
- MATH 5705 - Enumerative Combinatorics (4.0 cr)
- MATH 5707 - Graph Theory and Non-Enumerative Combinatorics (4.0 cr)
- MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
- MATS 3013 - Electrical and Magnetic Properties of Materials (3.0 cr)
- MATS 3801 - Structural Characterization Lab (4.0 cr)
- MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
- MATS 4212 - Ceramics (3.0 cr)
- MATS 4221 - Materials Performance (4.0 cr)
• STAT 5701 - Statistical Computing (3.0 cr)
• BMEN 3311 - Biomaterials (3.0 cr)
• BMEN 3315 - Biomaterials Lab (1.0 cr)
• CEGE 5551 - Environmental Microbiology (3.0 cr)
• CEGE 5552 - Environmental Microbiology Laboratory (1.0 cr)
• CHEM 4111W - Modern Instrumental Methods of Chemical Analysis Lab [WI] (2.0 cr)
• CHEN 4214 - Polymers (3.0 cr)
• CHEN 4223W - Polymer Laboratory [WI] (2.0 cr)
• EE 4161W - Energy Conversion and Storage [WI] (3.0 cr)
• EE 4163 - Energy Conversion and Storage Laboratory (1.0 cr)
• EE 4233 - State Space Control System Design (3.0 cr)
• EE 4237 - State Space Control Laboratory (1.0 cr)
• EE 4701 - Electric Drives (3.0 cr)
• EE 4703 - Electric Drives Laboratory (1.0 cr)
• EE 4721 - Introduction to Power System Analysis (3.0 cr)
• EE 4722 - Power System Analysis Laboratory (1.0 cr)
• EE 4741 - Power Electronics (3.0 cr)
• EE 4743 - Switch-Mode Power Electronics Laboratory (1.0 cr)
• EE 5621 - Physical Optics (3.0 cr)
• EE 5622 - Physical Optics Laboratory (1.0 cr)
• EE 5627 - Optical Fiber Communication (3.0 cr)
• EE 5628 - Fiber Optics Laboratory (1.0 cr)
• EE 5705 - Electric Drives in Sustainable Energy Systems (3.0 cr)
• EE 5707 - Electric Drives in Sustainable Energy Systems Laboratory (1.0 cr)

Biology

BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• ME 4031W - Basic Mechanical Measurements Laboratory [WI] (4.0 cr)
• ME 4043W - Industrial Assignment II [WI] (4.0 cr)
• ME 4054W - Design Projects [WI] (4.0 cr)
• ME 4131W - Thermal Environmental Engineering Laboratory [WI] (4.0 cr)
• ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

EIP

ME EIP program (engineering intern program or co-op program) is available during the last two years of study. Upper division status and a satisfactory GPA are required for admission. The co-op program provides applied engineering training in selected established industries during semesters of supervised assignments that alternate with semesters of University studies.

Students in the ME EIP program (engineering intern program or co-op program) may register for three industrial assignment courses. ME 3041 (2 credits), ME 4043W (4 credits), and ME 4044 (2 credits) for a total of 8 credits. ME 4044 is optional. These courses count toward the technical elective credit requirement.

Students register for industrial assignments as they would for regular classes. Requirements for the course include writing a summary of an article in a technical journal, attending a workshop (ME 3041, ME 4043W), submitting a report draft, and writing a final report. The course grade is based on writing; work performance cannot be considered in assigning a grade. The second industrial assignment, ME 4043W, is oriented toward solving a design problem and fulfills a 4-credit intensive writing course requirement. Cooperation from company personnel is required in accomplishing most reports, particularly the ME 4043W reports.

Internship

ME 3041 - Industrial Assignment I (2.0 cr)
ME 4043W - Industrial Assignment II [WI] (4.0 cr)
ME 4044 - Industrial Assignment III (2.0 cr)
Twin Cities Campus
Physics B.S. Phys.
School of Physics & Astronomy
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 89 to 99
- Degree: Bachelor of Science in Physics

The physics program prepares students for employment, often in industrial or governmental laboratories, or for further study at graduate or professional schools in physics, engineering, biophysics, medicine, education, law, or business.

The program integrates a broad foundation in physics that can be flexibly combined with coursework in other technical disciplines or used to specialize in physics. Students should consult a physics adviser to help formulate objectives for study.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 7 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Core Coursework
All of the sub-plans start with a common foundation in physics and mathematics. This basic core of physics and math, taken during the first two years, provides the necessary tools to move into one of the sub-plans within physics.

The freshman and sophomore years give students a broad introduction to the fundamental ideas of physics. During this same period students learn the mathematical techniques that they will need for advanced work in physics and other sciences.

Introductory Physics Core Requirement

Physics I
Phys 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or Phys 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
or Phys 1501V [Inactive] [PHYS, WI] (4.0 cr)

Physics II
Phys 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or Phys 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
or Phys 1502V [Inactive] [PHYS, WI] (4.0 cr)

Note: Phys 2503 and 2503H offered only fall semester.

PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
or PHYS 2503H - Honors Physics III (4.0 cr)

Lower Division Core Physics Requirement

PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)

Mathematics Requirements

Calculus I
Math 1271 - Calculus I [MATH] (4.0 cr)
or Math 1371 - CSE Calculus I [MATH] (4.0 cr)
or Math 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
Math 1272 - Calculus II (4.0 cr)
or Math 1372 - CSE Calculus II (4.0 cr)
or Math 1572H - Honors Calculus II (4.0 cr)

Calculus III
Math 2243 - Linear Algebra and Differential Equations (4.0 cr)
or Math 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or Math 2574H - Honors Calculus IV (4.0 cr)
General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

In addition to the core coursework, students must select one of the five sub-plans (professional, biological, computational, teaching, engineering) and complete the respective additional programmatic requirements (47-54 cr). These requirements are subject to departmental review for each student. Requirements for each sub-plan are detailed below.

Students intending to pursue graduate study in physics are strongly encouraged to take PHYS 4303.

Core Coursework

Common Core Physics Requirements
- PHYS 2601 - Quantum Physics (4.0 cr)
- PHYS 3041 - Mathematical Methods for Physicists (3.0 cr)
- PHYS 3605W - Modern Physics Laboratory [WI] (3.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
  or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
  or MATH 2573H - Honors Calculus III (4.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 or more course(s) from the following:
- PHIL 3601W - Scientific Thought [WI] (4.0 cr)
- PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
- PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.

Professional

This sub-plan is ideal for students who want the strongest possible grounding in physics. It is designed to suit the needs of students who are interested in fundamental physics or astrophysics, applying physics to the workplace, or who are planning on continuing their physics education in graduate school.

Professional Physics Sub-plan: Additional Programmatic Requirements (47-49 cr.)
- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (4.0 cr)
- PHYS 4101 - Quantum Mechanics (4.0 cr)
- PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
- PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
- PHYS 4303 - Electrodynamics and Waves (3.0 cr)

Technical Electives

Technical electives include any mathematics, science, or engineering course of technical nature by departmental advisor approval. Only one course may be an directed research or directed study course. Students are encouraged to discuss options for technical electives with their departmental advisor, as additional courses are frequently approved for inclusion in a student's technical electives based on individual interests and goals.

Take 19 or more credit(s) from the following:
- Upper Level Physics Elective
  Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  - PHYS 3022 - Introduction to Cosmology (3.0 cr)
  - PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  - PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• PHYS 4211 - Introduction to Solid-State Physics (3.0 cr)
• PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
• PHYS 4623 - Introduction to Modern Optics (3.0 cr)
• PHYS 4811 - Introduction to General Relativity (3.0 cr)
• PHYS 5041 - Mathematical Methods for Physics (4.0 cr)
• PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
• or PHYS 5081 - Introduction to Biopolymer Physics (3.0 cr)

• Other Technical Electives
Take at most 16 credit(s) from the following:

• AST 4001 - Astrophysics I (4.0 cr)
• AST 4002 - Astrophysics II (4.0 cr)
• AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
• EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5583 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
• or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
• or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)

Biological

Students who are interested in entering the biological sciences or medicine will find this sub-plan an attractive option. Physics applies to biology at all levels, from the basics of biosystems to biomedical engineering. This option can be very useful to students who want to pursue a career in biomedical industry. It also provides a strong foundation for students interested in pursuing an advanced degree in biophysics, molecular biology, physiology, medical physics, biomedical engineering, or medical school. Combined with the physics core curriculum this biological sub-plan gives students powerful tools to achieve their goals.

Biological Sub-plan: Additional Programmatic Requirements (51 cr)

Chemistry Requirements
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)

Biochemistry Requirements
BIOC 3021 - Biochemistry (3.0 cr)

Biology Requirements
Counted in the CLE requirement.
BIOL 1009 - General Biology [BIOL] (4.0 cr)

Upper Division Physics Requirements
Up to 2 of these may be replaced by similar courses in other departments with advisor approval.
PHYS 4001 - Analytical Mechanics (4.0 cr)
PHYS 4002 - Electricity and Magnetism (4.0 cr)
PHYS 4101 - Quantum Mechanics (4.0 cr)
PHYS 4201 - Statistical and Thermal Physics (3.0 cr)
Methods of Experimental Physics
PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)

Technical Electives
Technical electives include any mathematics, science, or engineering course of technical nature by departmental advisor approval. Only one course may be a directed research/study course. PHYS 4911 is strongly recommended for students interested in biological physics. Students are encouraged to discuss options for technical electives with their departmental advisor, as additional courses are often approved for inclusion in a student's technical electives based on individual interests and goals.

Take 8 or more credit(s) from the following:
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4567 - Applied Fourier Analysis (4.0 cr)
• PHYS 3022 - Introduction to Cosmology (3.0 cr)
• PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• PHYS 4211 - Introduction to Solid-State Physics (3.0 cr)
• PHYS 4303 - Electrodynamics and Waves (3.0 cr)
• PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
• PHYS 4623 - Introduction to Modern Optics (3.0 cr)
• PHYS 4811 - Introduction to General Relativity (3.0 cr)
• PHYS 4911 - Introduction to Biopolymer Physics (4.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
  or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)

Computational
This sub-plan is ideal for students who seek a strong grounding in physics and the computational techniques used in physics research. Computational physics connects physics, computer science, and applied mathematics to provide scientific solutions to realistic and often complex problems. Students who are interested in moving directly into industry, as well as those who want to pursue a graduate degree in physics will find this program valuable.

Computational Sub-plan: Additional Programmatic Requirements (48-49 cr)

Upper Division Physics Requirements
PHYS 4001 - Analytical Mechanics (4.0 cr)
PHYS 4002 - Electricity and Magnetism (4.0 cr)
PHYS 4101 - Quantum Mechanics (4.0 cr)
PHYS 4201 - Statistical and Thermal Physics (3.0 cr)

Methods of Experimental Physics
PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)

Computer Programming
Intro to C/C++
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or A comparable computer language course may be substituted for CSCI 1113.

Structure of Computer Programming
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
  or CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Computational Elective
A minimum of one elective course with a computational focus must be taken as part of this subplan.
AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  or PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
  or CHEM 4021 - Computational Chemistry (3.0 cr)
  or AEM 5253 - Computational Fluid Mechanics (3.0 cr)

Technical Electives
Technical electives include any mathematics, science, or engineering course of technical nature by departmental advisor approval. Only one course may be a directed research or directed study course. Students are encouraged to discuss options for technical electives with their departmental advisor, as additional courses are frequently approved for inclusion in a student's technical electives based on individual interests and goals.

Take 12 or more credit(s) from the following:
Secondary Education
For students who are interested in teaching secondary school physics, this program offers a versatile broad-based education. It is particularly useful to students who are planning on teaching in Minnesota, as it has been optimized to fit well with the new state licensure procedures. And, should a student’s needs or plans change, this program combined with the physics core curriculum also prepares him or her for a variety of other career tracks, including graduate study in physics.

Secondary Education Sub-plan: Additional Programmatic Requirements (52-53 cr)
Upper Division Physics Requirements
Take 2 or more course(s) from the following:
• PHYS 4001 - Analytical Mechanics (4.0 cr)
• PHYS 4002 - Electricity and Magnetism (4.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
Methods of Experimental Physics
PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)
Historical and Social Perspectives of Science and Philosophical Foundations
Take 1 or more course(s) from the following:
• PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• HSCI 3814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
• HSCI 3815 - Making Modern Science: Atoms, Genes and Quanta [HIS, GP] (3.0 - 4.0 cr)
General Psychology
Take 1 or more course(s) from the following:
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
Philosophical Foundations
Take 1 or more course(s) from the following:
• PHIL 1005 - Scientific Reasoning (4.0 cr)
• PHIL 3601W - Scientific Thought [WI] (4.0 cr)
Technical Electives
Technical electives include any math, science, or engineering course of technical nature by departmental advisor approval. Students with the intent of continuing in physics graduate school are strongly encouraged to take PHYS 4001, 4002, 4101, and 4201. Only one course may be a directed research or directed study course. Students are encouraged to discuss options with their departmental advisor, as additional courses are frequently approved for inclusion based on individual interests and goals.
Take 23 or more credit(s) from the following:
• AST 4001 - Astrophysics I (4.0 cr)
Engineering Sub-plan: Additional Programmatic Requirements (47 cr)

Note that CHEM 1061 and 1065, which are required for several of the engineering majors, are strongly recommended.

Upper Division Physics Requirements
Up to 2 of these may be replaced by courses covering related material in other CSE departments with advisor approval.

Methods of Experimental Physics

Technical Electives
Technical electives include any mathematics, science, or engineering course of technical nature by departmental advisor approval. Only one course may be an directed research or directed study course. Students are encouraged to discuss options for technical
electives with their departmental advisor, as additional courses are frequently approved for inclusion in a student's technical electives based on individual interests and goals.

Take 22 or more credit(s) from the following:

**Upper Level Math Electives**
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
- MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
- MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
- MATH 5583 - Complex Analysis (4.0 cr)
- MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
- MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)

**Upper Level Physics Electives**
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
- PHYS 3022 - Introduction to Cosmology (3.0 cr)
- PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)
- PHYS 4211 - Introduction to Solid-State Physics (3.0 cr)
- PHYS 4511 - Introduction to Nuclear and Particle Physics (3.0 cr)
- PHYS 4611 - Introduction to Space Physics (3.0 cr)
- PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
- PHYS 4623 - Introduction to Modern Optics (3.0 cr)
- PHYS 4811 - Introduction to General Relativity (3.0 cr)
- PHYS 5041 - Mathematical Methods for Physics (4.0 cr)
- PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
  or PHYS 5081 - Introduction to Biopolymer Physics (3.0 cr)

**Other Technical Electives**
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)
- AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
- EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4512 - Differential Equations with Applications (3.0 cr)
- MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
- MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
- MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
- CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
  or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
  or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
Twin Cities Campus
Accounting B.S.B.
Accounting
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 85
- Degree: Bachelor of Science in Business

Accounting is the process of gathering financial information and presenting it in a manner that will help users of that information make better decisions. Accountants are also frequently called upon to analyze financial information and provide important business advice. The terms and definitions that have emerged from the discipline are used widely. In fact, accounting is commonly described as the "language of business."

The role of accountants has changed dramatically over the years and are recognized as valued business advisers and important members of an organization's management team.

The major areas of study within the accounting curriculum are financial accounting, management accounting, income taxation, auditing, and business law.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Tool Courses
Microeconomics
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
ECON 1102 - Principles of Macroeconomics (4.0 cr)
or APEC 1102 - Principles of Macroeconomics (3.0 cr)

Calculus
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
or STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
or STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 50% (25 cr) of the upper division credits in the major must be taken at the University of Minnesota Twin Cities Campus.

Effective July 1, 2006: Students who wish to earn the Certified Public Accountant (CPA) certification will need to complete 150 credit hours of coursework. These credits may be completed after earning the BSB degree.

Lower Division Requirements
Management
- Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
  - MGMT 1001 - Contemporary Management (3.0 cr)
  - MGMT 1001H - Honors: Contemporary Management (3.0 cr)
  - MGMT 3001 - Fundamentals of Management (3.0 cr)

Corporate Responsibility & Ethics
- MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
  - MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

Psychology
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
  - PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Career Skills
- BA 3000 - Career Skills (1.0 cr)
  - IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core
Students complete the Immersion Core as a cohort. While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core.
- SCO 3001 - Supply Chain and Operations (3.0 cr)
- MGMT 3004 - Business Strategy (3.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)
  - FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
- MKTG 3001 - Principles of Marketing (3.0 cr)
  - MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

Additional Core Requirements
Information Systems
- IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
  - IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Human Resources
- HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
  - HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
  - IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)
Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

Business Communications
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major Courses
ACCT 5101 - Intermediate Accounting I (4.0 cr)
ACCT 5102 - Intermediate Accounting II (4.0 cr)
ACCT 5125W - Auditing Principles and Procedures [WI] (4.0 cr)
ACCT 5135 - Fundamentals of Federal Income Tax (4.0 cr)
ACCT 5141 - Financial-Data Analytics (2.0 cr)
ACCT 5201 - Intermediate Management Accounting (2.0 cr)
BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)

Electives
Take 4 or more credit(s) from the following:
• ACCT 5126 - Internal Auditing (2.0 cr)
• ACCT 5160 - Financial Statement Analysis (2.0 cr)
• ACCT 5180 - Consolidations and Advanced Reporting (2.0 cr)
• ACCT 5236 - Introduction to Taxation of Business (2.0 cr)
• ACCT 5310 - International Accounting (2.0 cr)
• IDSC 4411 - Information Technology Governance and Assurance (2.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term programs or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• ACCT 5125W - Auditing Principles and Procedures [WI] (4.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS in Business/Master in HRIR
This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the MHRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to HRIR 3041 and 3042, HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.

BSB/Masters Human Resources and Industrial Relations
Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

**Fall semester, Year 4**
- HRIR 6301 - Staffing, Training, and Development (4.0 cr)
- HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
- HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

**Spring semester, Year 4**
- HRIR 6805 is taken both terms
- HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
- HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Accounting Minor
Accounting
Curtis L. Carlson School of Management

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

See major description for more information.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

Students are required to complete Acct 2050 with a B- or better prior to entry into the minor. Students who complete an equivalent course or who earn less than a B- must take and pass a pretest prior to enrolling in Acct 5101.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Introduction to Financial Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Minor Requirements
At least 3 upper-division credits of the minor requirements must be completed at the University of Minnesota Twin Cities campus.

Minor Courses
ACCT 5101 - Intermediate Accounting I (4.0 cr)
ACCT 5102 - Intermediate Accounting II (4.0 cr)
Take 4 or more credit(s) from the following:
• ACCT 5126 - Internal Auditing (2.0 cr)
• ACCT 5135 - Fundamentals of Federal Income Tax (4.0 cr)
• ACCT 5141 - Financial-Data Analytics (2.0 cr)
• ACCT 5160 - Financial Statement Analysis (2.0 cr)
• ACCT 5180 - Consolidations and Advanced Reporting (2.0 cr)
• ACCT 5201 - Intermediate Management Accounting (2.0 cr)
• ACCT 5310 - International Accounting (2.0 cr)
Twin Cities Campus
Business Analytics Minor
Information & Decision Sciences
Curtis L. Carlson School of Management

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18 to 19
• No

The business analytics minor is available to degree-seeking students admitted to the Carlson School of Management at the University of Minnesota. The minor provides an opportunity for students specializing in one of the functional areas in business to gain additional skills that will prepare them for data-driven and analytics-based decision making.

Students undertaking this minor will be exposed to courses in descriptive, predictive, and prescriptive analytics. Students will also be able to take electives that will apply analytic tools specialized to various functional areas like finance, marketing, and information systems.

Graduates will be prepared to interact with specialized data scientists and bring the insights from the large amounts of data being produced in the market place to their functional areas.

As business analytics emerges in the market across a variety of functional areas (information systems, marketing, finance, human capital, etc.), the demand for this skill set is envisioned to cut across all undergraduate business majors, making a minor in business analytics paired with a functional major ideal.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisites
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)

Business Statistics: Data Sources, Presentation, and Analysis
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
or STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
or STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

Minor Requirements
A minimum of 3 credits in the minor must be taken at the University of Minnesota Twin Cities campus.
MKTG 3005 - Introduction to Applying Analytical Tools for Solving Business Problems (2.0 cr)
IDSC 4110 - Data Engineering for Business Analytics (2.0 cr)
IDSC 4444 - Descriptive and Predictive Analytics (2.0 cr)
Take 6 or more credit(s) from the following:
•ACCT 5141 - Financial-Data Analytics (2.0 cr)
•FINA 5422 - Financial Econometrics and Computational Methods I (2.0 cr)
•FINA 5423 - Financial Econometrics and Computational Methods II (2.0 cr)
•HRIR 3111 - Human Resource Analytics (2.0 cr)
•IDSC 3103 - Data Modeling and Databases (2.0 cr)
•IDSC 4210 - Interactive Data Visualization for Business Analytics (2.0 cr)
•IDSC 4310 - Prescriptive Analytics (2.0 cr)
•MILI 3963 - Health Market Analytics (3.0 cr)
•MKTG 4072 - Marketing-in-Action: Marketing Practicum (4.0 cr)
•MKTG 4074 - Data-Driven Marketing (4.0 cr)
•MKTG 4076 - Digital Marketing (2.0 cr)
Twin Cities Campus

Business Law Minor

Law School
Curtis L. Carlson School of Management

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The business law minor is available to undergraduate degree-seeking students at the University of Minnesota. The minor provides an opportunity for students to explore issues and concepts at the intersection of law and business. Legal regulation of firms and markets is pervasive. Students interested in a career in business should understand how law structures business entities and the environments in which they operate and how law both enables and constrains innovation. Students will learn analytical techniques that will be helpful in business settings and that can prepare them for further study in a law school, an MBA program, or other graduate program.

Among the topics that students can explore through the minor are: the formation and regulation of business entities, the challenges of operating in a regulated market, rules applicable to fields in which many students will work (e.g., insurance, banking, consumer services, and manufacturing), and the intricacies of creating and managing intellectual property. Students who complete the minor will be in a better position to innovate; identify, define, and solve problems; and communicate effectively in interactions with lawyers as they navigate through regulatory requirements that all businesses inevitably confront. The minor thus provides a portal to new ways of thinking and new forms of knowledge.

Required and elective courses in the minor are offered through the Carlson School of Management and the Law School. Transfer course substitutions may be considered for business designated courses (FINA, MGMT, BLAW). No substitutions will be made for LAW designated courses and no more than 2 courses may be transferred into the minor.

All advising is through the Undergraduate Program Office in the Carlson School of Management, room 2-190 Hanson Hall (lawminor@umn.edu; 612-624-3313). Undergraduates enrolled in graduate-level courses will be graded separately from graduate students.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
- 3.00 already admitted to the degree-granting college
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements

Introduction
Note: undergraduates must complete Law 3000 with a grade of C or higher before enrolling in other Law School courses as part of the minor. Students should therefore plan ahead and complete this course as early as possible.

LAW 3000 - Introduction to American Law and Legal Reasoning (3.0 cr)

Business and Accounting Concepts
Students must take one (and only one) of the following business and accounting concepts courses.
FINA 3001 - Finance Fundamentals (3.0 cr)
or LAW 5076 - Essentials of Business for Lawyers (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
or MGMT 3004 - Business Strategy (3.0 cr)

Elective Courses
Students should complete their remaining credits from a selection of courses listed below. Please note that not all courses are offered each year, and students enrolled in Law School degree programs receive first preference in the registration process. Appropriate Law School courses not on the list below may be taken to fulfill minor requirements, with permission from the students advisor in the minor.
program.
Take 9 or more credit(s) from the following:

- BLAW 3059 - Real Estate Law (2.0 cr)
- BLAW 3061 - Business Law Basics (2.0 cr)
- BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
- LAW 3050 - Law of Business Organizations (3.0 cr)
- LAW 5061 - Financial Regulation (3.0 cr)
- LAW 5062 - Energy Law (3.0 cr)
- LAW 5078 - Legislation and Regulation (3.0 cr)
- LAW 5100 - Taxation I (3.0 cr)
- LAW 5102 - Mergers and Acquisitions (3.0 cr)
- LAW 5103 - Data Privacy Law (3.0 cr)
- LAW 5211 - Federal Securities Regulation (3.0 cr)
- LAW 5214 - Insurance Law (3.0 cr)
- LAW 5224 - Patents (3.0 cr)
- LAW 5601 - International Business Transactions (3.0 cr)
- LAW 5608 - Trademarks (3.0 cr)
- LAW 5613 - Copyright (3.0 cr)
- LAW 5707 - Intellectual Property Transactions (2.0 cr)
- LAW 5908 - Independent Research and Writing (1.0 - 2.0 cr)
Twin Cities Campus

Business of Healthcare Minor
Finance
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 12 to 13

The Business of Healthcare minor is available to degree-seeking students admitted to the Carlson School of Management at the University of Minnesota. The minor provides an opportunity for students specializing in one of the functional areas in business to gain additional skills that prepare them with a deeper knowledge of the medical industry. Students undertaking this minor will be exposed to courses on healthcare marketplace, institutions, regulations, reimbursement, medical technology, and analytics applicable to the medical industry. Knowledge of the medical industry landscape complements disciplinary training of the Carlson undergraduate majors.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

This minor is only available to students who are pursuing a B.S.B. degree from the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
This minor is only available to students who are pursuing a B.S.B. degree from the Carlson School of Management.

Minor requirements

- MILI 3585 - Navigating the Healthcare Marketplace with Economic, Social and Policy Lenses [SOCS] (3.0 cr)
- MILI 3589 - Medical Technology and Society [TS] (3.0 cr)
- MILI 3963 - Health Market Analytics (3.0 cr)

Take 3 or more credit(s) from the following:

- ACCT 5160 - Financial Statement Analysis (2.0 cr)
- ACCT 5201 - Intermediate Management Accounting (2.0 cr)
- FINA 4221 - Principles of Corporate Finance (2.0 cr)
- FINA 4422 - Financial Modeling (2.0 cr)
- GCC 3003 - Seeking Solutions to Global Health Issues [GP] (3.0 cr)
- GCC 3028 - Harnessing the power of research, community, clinic and policy to build a culture of health [DSJ] (3.0 cr)
- GCC 3033 - Advancing Health Equity: The Structural Determination at Home and Abroad [DSJ] (3.0 cr)
- HHR 3042 - Organizational Behavior: Groups and Teams (2.0 cr)
- HHR 3111 - Human Resource Analytics (2.0 cr)
- IDSC 4210 - Interactive Data Visualization for Business Analytics (2.0 cr)
- IDSC 4310 - Prescriptive Analytics (2.0 cr)
- IDSC 4401 - Information Security (2.0 cr)
- INS 4100 - Corporate Risk Management (2.0 cr)
- MGMT 4034 - Technology Strategy (2.0 cr)
- MGMT 4035 - Mergers & Acquisitions Strategy (2.0 cr)
- MGMT 4040 - Negotiation Strategies (4.0 cr)
- MKTG 4074 - Data-Driven Marketing (4.0 cr)
- MKTG 4085 - Nudge: Improving Decisions about Health, Wealth, and Happiness (2.0 cr)
- SCO 3051 - Service Management (2.0 cr)
- SCO 3059 - Quality Management and Lean Six Sigma (4.0 cr)
- SCO 3072 - Managing Technologies in the Supply Chain (2.0 cr)
- MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
- or IBUS 4050 - Management of Innovation and Change (4.0 cr)
Twin Cities Campus
Entrepreneurial Management B.S.B.
CSOM Strategic Mgmt & Entrepre
Curtis L. Carlson School of Management

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 75 to 82
• Degree: Bachelor of Science in Business

The entrepreneurial management major is designed for students who are interested in starting a new business (entrepreneurship), helping existing organizations to develop new business opportunities (intrapreneurship), or creating positive social impact through the development of new ventures (social entrepreneurship). Curriculum is designed to range from introductory problem-solving concepts and self-exploration through the development and implementation of real business opportunities with a broad range of elective courses from across campus. The objective is to provide experiential and applied learning opportunities that develop the mindset, skills, and competencies that enable students to create their own opportunities and function as entrepreneurs or as innovative leaders in entrepreneurial or high potential firms.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 3.00 transferring from another University of Minnesota college
• 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework, but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Tool Courses
Microeconomics
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
ECON 1102 - Principles of Macroeconomics (4.0 cr)
or APEC 1102 - Principles of Macroeconomics (4.0 cr)

Calculus
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

At least 50% (23 cr) of the upper-division major credits must be completed at the University of Minnesota Twin Cities campus.

**Lower Division Requirements**

**Management**
- Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
- MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)

**Corporate Responsibility & Ethics**
- MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

**Psychology**
- PSY 1001 - Introduction to Psychology [SOCSE] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCSE] (4.0 cr)

**Career Skills**
- BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

**Immersion Core**
- Students complete the Immersion Core as a cohort.
- SCO 3001 - Supply Chain and Operations (3.0 cr)
-or MGMT 3004 - Business Strategy (3.0 cr)
-or FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
-or MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

**Additional Core Requirements**

**Information Systems**
-or IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

**Human Resources**
-or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

**Managerial Accounting**
-or ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

**Business Communications**
-or MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

**Major Courses**
MGMT 4008 - Entrepreneurial Management (4.0 cr)
MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
  or IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
  or IBUS 4050 - Management of Innovation and Change (4.0 cr)
MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
  or MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
  or MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)

Electives
Choose 8 credits from the list below. Courses may not double count in the required category and elective category.
Take 8 or more credit(s) from the following:
- ACCT 5160 - Financial Statement Analysis (2.0 cr)
- ACCT 5201 - Intermediate Management Accounting (2.0 cr)
- ANTH 4121 - Business Anthropology (3.0 cr)
- BA 4503 - Carlson Ventures Enterprise (2.0 - 3.0 cr)
- BLAW 3061 - Business Law Basics (2.0 cr)
- BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
- FINA 4221 - Principles of Corporate Finance (2.0 cr)
- FINA 4422 - Financial Modeling (2.0 cr)
- GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
- HRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
- HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
- IBUS 3055 - Innovating with Technology: Global IT Entrepreneurship in Action (4.0 cr)
- IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)
- INS 4100 - Corporate Risk Management (2.0 cr)
- MGMT 4000 - Social Venturing in Action (4.0 cr)
- MGMT 4040 - Negotiation Strategies (4.0 cr)
- MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
- MGMT 4100 - Topics in Management (2.0 - 4.0 cr)
- MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
- MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
- MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
- MGMT 5018 - Philanthropy & Fundraising Strategy (2.0 cr)
- MGMT 5102 - StartUp: Customer Development and Testing (2.0 cr)
- MKTG 3010 - Marketing Research (4.0 cr)
- MKTG 4030 - Sales Management (4.0 cr)
- MKTG 4050 - Advertising and Promotion (4.0 cr)
- PA 5743 - Social Innovation Design Lab: Making Your Idea a Reality (1.5 cr)
- PDES 2701 - Creative Design Methods (3.0 cr)
- PDES 3711 - Product Innovation Lab (4.0 cr)
- SCO 3041 - Project Management (2.0 cr)
- SCO 3056 - Supply Chain Planning and Control (4.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term programs or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
- MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
- MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
- IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Integrated BS in Business/Master in HRIR

This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the MHRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to HRIR 3041 and 3042, HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.

BSB/Masters Human Resources and Industrial Relations

Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

**Fall semester, Year 4**
- HRIR 6301 - Staffing, Training, and Development (4.0 cr)
- HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
- HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

**Spring semester, Year 4**
- HRIR 6805 is taken both terms
- HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
- HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Entrepreneurial Management Minor
CSOM Strategic Mgmt & Entrepr
Curtis L. Carlson School of Management

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

See major description for more information.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available for students pursuing a BSB degree in the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
A minimum of 3 credits in the minor must be completed at the University of Minnesota Twin Cities campus.

Required Courses
MGMT 4008 - Entrepreneurial Management (4.0 cr)
MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
or IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)

Plus one from the following:
Take 1 or more course(s) from the following:
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
or IBUS 4050 - Management of Innovation and Change (4.0 cr)

Electives
Choose additional elective courses from the list below or courses not chosen above for a total of 16 credits. Courses may not count in both categories.

Take 4 - 6 credit(s) from the following:
• ACCT 5160 - Financial Statement Analysis (2.0 cr)
• ACCT 5201 - Intermediate Management Accounting (2.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• BA 4503 - Carlson Ventures Enterprise (2.0 - 3.0 cr)
• BLAW 3061 - Business Law Basics (2.0 cr)
• BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
• FINA 4221 - Principles of Corporate Finance (2.0 cr)
• FINA 4422 - Financial Modeling (2.0 cr)
• GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• HRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
• HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
• IBUS 3055 - Innovating with Technology: Global IT Entrepreneurship in Action (4.0 cr)
• IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)
• INS 4100 - Corporate Risk Management (2.0 cr)
• MGMT 4000 - Social Venturing in Action (4.0 cr)
• MGMT 4040 - Negotiation Strategies (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• MGMT 4100 - Topics in Management (2.0 - 4.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
• MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
• MGMT 5018 - Philanthropy & Fundraising Strategy (2.0 cr)
• MGMT 5102 - StartUp: Customer Development and Testing (2.0 cr)
• MKTG 3010 - Marketing Research (4.0 cr)
• MKTG 4030 - Sales Management (4.0 cr)
• MKTG 4050 - Advertising and Promotion (4.0 cr)
• PA 5743 - Social Innovation Design Lab: Making Your Idea a Reality (1.5 cr)
• PDES 2701 - Creative Design Methods (3.0 cr)
• PDES 3711 - Product Innovation Lab (4.0 cr)
• SCO 3041 - Project Management (2.0 cr)
• SCO 3056 - Supply Chain Planning and Control (4.0 cr)
• MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)

or IBUS 4050 - Management of Innovation and Change (4.0 cr)
Twin Cities Campus
Finance & Risk Management Insurance B.S.B.

Finance
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 82
- Degree: Bachelor of Science in Business

The Finance & Risk Management Insurance major applies theory to practice using principles of finance, law, and mathematics in the transfer and reduction of risk for individuals, corporations, and government. Risk management is the practice of identifying the risks that affect a company's business and finding ways to mitigate and offset those risks. Risk management tools and techniques help corporations deal with a wide variety of issues and legal concerns.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Tool Courses
Microeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- or APEC 1102 - Principles of Macroeconomics (4.0 cr)

Calculus
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- or STAT 3022 - Data Analysis (4.0 cr)
- or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
- or SOC 3811 - Social Statistics [MATH] (4.0 cr)
- or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
- or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
- or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 50% (23 cr) of the upper division major credits must be completed at the University of Minnesota Twin Cities campus.

Lower Division Requirements
Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
Management
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
Corporate Responsibility & Ethics
MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)
Career Skills
BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core
Students complete the Immersion Core as a cohort.

While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core.
SCO 3001 - Supply Chain and Operations (3.0 cr)
MGMT 3004 - Business Strategy (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

Additional Core Requirements
Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)
Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)
Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)
Business Communications
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major Courses
ACCT 5101 - Intermediate Accounting I (4.0 cr)
FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
FINA 4221 - Principles of Corporate Finance (2.0 cr)
FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
FINA 4422 - Financial Modeling (2.0 cr)
FINA 4522 - Options & Derivatives I (2.0 cr)
INS 4100 - Corporate Risk Management (2.0 cr)
INS 4101 - Employee Benefits (2.0 cr)
INS 4200 - Insurance Theory and Practice (2.0 cr)

Take 2 or more credit(s) from the following:
• BLAW 3061 - Business Law Basics (2.0 cr)
• BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
• FINA 4122 - Banking Institutions (2.0 cr)
• FINA 4234 - Mergers and Acquisitions In Action – Process and Valuation (2.0 cr)
• FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
• FINA 4325 - Behavioral Finance (2.0 cr)
• FINA 4329 - Security Analysis Capstone (2.0 cr)
• FINA 4529 - Derivatives II Capstone (2.0 cr)
• FINA 4621 - The Global Economy (Macro) (2.0 cr)
• FINA 4622 - International Finance (2.0 cr)
• FINA 4920 - FinanceTopics (2.0 - 4.0 cr)
• FINA 5422 - Financial Econometrics and Computational Methods I (2.0 cr)
• FINA 5423 - Financial Econometrics and Computational Methods II (2.0 cr)
• IBUS 4125 - Global Banking: A Survey of Regulatory and Competitive Developments Post Financial Crisis (2.0 cr)
• MATH 4065 - Theory of Interest (4.0 cr)
• MATH 5067 - Actuarial Mathematics I (4.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS in Business/Master in HRIR
This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year, and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the M.HRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to HRIR 3041 and 3042, HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.
BSB/Masters Human Resources and Industrial Relations
Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

Fall semester, Year 4
- HRIR 6301 - Staffing, Training, and Development (4.0 cr)
- HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
- HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

Spring semester, Year 4
- HRIR 6805 is taken both terms.
- HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
- HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Finance B.S.B.

Finance Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 81
- Degree: Bachelor of Science in Business

Finance is about understanding economic value. Specifically how the decisions made by firms determine the economic value of firms or investment opportunities.

Since all firms must invest capital (cash) to operate and grow, all firms simultaneously compete with each other, and all other investment opportunities, for capital in Capital Markets. Finance professionals estimate and evaluate economic value and risk focusing on estimating future cash flow and using information from Capital Markets.

Finance professionals include economists, operating managers, financial analysts, data scientists, researchers, investors, and financial advisors.

Finance professionals are quantitative & analytical utilizing mathematical tools and building models to inform decision making.
Finance professionals are curious, researching, and understanding firms and markets.
Finance professionals are strong communicators, helping colleagues understand the financial implications of their business decisions and investment opportunities.
Finance professionals are comfortable with ambiguity, recognizing, and quantifying the economic impact of risk and uncertainty.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five-tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Tool Courses
Microeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)
Macroeconomics
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- or APEC 1102 - Principles of Macroeconomics (4.0 cr)
Calculus
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or **ACCT 2050H** - Honors: Introduction to Financial Reporting (4.0 cr)

**Statistics**
- **SCO 2550** - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)
- **STAT 3021** - Introduction to Probability and Statistics (3.0 cr)
- **STAT 3022** - Data Analysis (4.0 cr)
- **PSY 3801** - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
- **SOC 3811** - Social Statistics [MATH] (4.0 cr)
- **IE 3521** - Statistics, Quality, and Reliability (4.0 cr)
- **EE 3025** - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
- **CEGE 3102** - Uncertainty and Decision Analysis (3.0 cr)
- **ANSC 3011** - Statistics for Animal Science (4.0 cr)
- **STAT 4101** - Theory of Statistics I (4.0 cr)
- **STAT 4102** - Theory of Statistics II (4.0 cr)
- **STAT 5101** - Theory of Statistics I (4.0 cr)
- **STAT 5102** - Theory of Statistics II (4.0 cr)
- **MATH 5651** - Basic Theory of Probability and Statistics (4.0 cr)
- **MATH 5652** - Introduction to Stochastic Processes (4.0 cr)

**General Requirements**
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**
At least 50% (23 cr) of the upper-division major credits must be completed at the University of Minnesota, Twin Cities campus.

Students may not complete both a Finance major and a Finance and Risk Management Insurance major due to overlap of requirements.

**Lower Division Requirements**
**Management**
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.

- **MGMT 1001** - Contemporary Management (3.0 cr)
- **MGMT 1001H** - Honors: Contemporary Management (3.0 cr)
- **MGMT 3001** - Fundamentals of Management (3.0 cr)

**Corporate Responsibility & Ethics**

- **MGMT 1005** - Corporate Responsibility and Ethics [CIV] (3.0 cr)
- **MGMT 1005H** - Corporate Responsibility and Ethics [CIV] (3.0 cr)

**Psychology**

- **PSY 1001** - Introduction to Psychology [SOCS] (4.0 cr)
- **PSY 1001H** - Honors Introduction to Psychology [SOCS] (4.0 cr)

**Career Skills**

- **BA 3000** - Career Skills (1.0 cr)
- **IBUS 3006** - Global Career Skills (2.0 cr)

**Immersion Core**
Students complete the Immersion Core as a cohort. While not currently required, students are strongly encouraged to complete **BA 1001 Analyzing Business Problems Using Excel**, prior to taking the Immersion Core.

- **SCO 3001** - Supply Chain and Operations (3.0 cr)
- **MGMT 3004** - Business Strategy (3.0 cr)
- **FINA 3001** - Finance Fundamentals (3.0 cr)
- **FINA 3001H** - Honors: Finance Fundamentals (3.0 cr)
- **MKTG 3001** - Principles of Marketing (3.0 cr)
- **MKTG 3001H** - Honors: Principles of Marketing (3.0 cr)

**Additional Core Requirements**
**Information Systems**
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

Business Communications
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major Courses
ACCT 5101 - Intermediate Accounting I (4.0 cr)
FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
FINA 4221 - Principles of Corporate Finance (2.0 cr)
FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
FINA 4422 - Financial Modeling (2.0 cr)
FINA 4522 - Options & Derivatives I (2.0 cr)

Electives
Take 8 or more credit(s) from the following:
• ACCT 5160 - Financial Statement Analysis (2.0 cr)
• FINA 4122 - Banking Institutions (2.0 cr)
• FINA 4234 - Mergers and Acquisitions In Action – Process and Valuation (2.0 cr)
• FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
• FINA 4325 - Behavioral Finance (2.0 cr)
• FINA 4329 - Security Analysis Capstone (2.0 cr)
• FINA 4529 - Derivatives II Capstone (2.0 cr)
• FINA 4621 - The Global Economy (Macro) (2.0 cr)
• FINA 4622 - International Finance (2.0 cr)
• FINA 4920 - FinanceTopics (2.0 - 4.0 cr)
• FINA 5422 - Financial Econometrics and Computational Methods I (2.0 cr)
• FINA 5423 - Financial Econometrics and Computational Methods II (2.0 cr)
• IBUS 4125 - Global Banking: A Survey of Regulatory and Competitive Developments Post Financial Crisis (2.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students should attend an International Experience (IE) 101 workshop early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division Writing Intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS in Business/Master in HRIR
This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

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Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the M.HRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to HRIR 3041 and 3042, HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.

BSB/Masters Human Resources and Industrial Relations

Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

**Fall semester, Year 4**
- HRIR 6301 - Staffing, Training, and Development (4.0 cr)
- HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
- HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

**Spring semester, Year 4**
- HRIR 6805 is taken both terms.
- HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
- HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Finance Minor
Finance
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

See major description for more information.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students who are pursuing a BSB degree at the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Finance Fundamentals
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)

Minor Requirements
At least 3 upper-division credits of the minor requirements must be completed at the University of Minnesota Twin Cities campus.

Minor Courses
FINA 4221 - Principles of Corporate Finance (2.0 cr)
FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)

Electives
Take 6 or more credit(s) from the following:
- FINA 4122 - Banking Institutions (2.0 cr)
- FINA 4234 - Mergers and Acquisitions In Action – Process and Valuation (2.0 cr)
- FINA 4325 - Behavioral Finance (2.0 cr)
- FINA 4329 - Security Analysis Capstone (2.0 cr)
- FINA 4422 - Financial Modeling (2.0 cr)
- FINA 4522 - Options & Derivatives I (2.0 cr)
- FINA 4529 - Derivatives II Capstone (2.0 cr)
- FINA 4621 - The Global Economy (Macro) (2.0 cr)
- FINA 4622 - International Finance (2.0 cr)
- FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
- FINA 4920 - Finance Topics (2.0 - 4.0 cr)
- FINA 5422 - Financial Econometrics and Computational Methods I (2.0 cr)
- FINA 5423 - Financial Econometrics and Computational Methods II (2.0 cr)
- IBUS 4125 - Global Banking: A Survey of Regulatory and Competitive Developments Post Financial Crisis (2.0 cr)
Human Resource Management is critical to the successful functioning of an organization. As an HR major, you will learn how organizations use human resources management to create a competitive organization and to help employees achieve fulfilling work lives. Among many other important topics, you will learn to facilitate human resources practices to:

- Attract, recruit, select, reward, and retain the best talent for your organization
- Provide employee feedback, coaching, and developmental opportunities for employees
- Design and evaluate training and development programs
- Determine fair and equitable pay structures
- Improve employee engagement and organizational culture
- Meet legal standards

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 3.00 transferring from another University of Minnesota college
• 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Tool Courses

Microeconomics
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
ECON 1102 - Principles of Macroeconomics (4.0 cr)

or APEC 1102 - Principles of Macroeconomics (3.0 cr)

Calculus
MATH 1142 - Short Calculus [MATH] (4.0 cr)

or MATH 1271 - Calculus I [MATH] (4.0 cr)

or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)

or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 50% (23 cr) of the upper-division major credits must be completed at the University of Minnesota Twin Cities campus.

Lower Division Requirements
Management
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)

Corporate Responsibility & Ethics
MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Career Skills
BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core
Students complete the Immersion Core as a cohort. While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core.
SCO 3001 - Supply Chain and Operations (3.0 cr)
MGMT 3004 - Business Strategy (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

Additional Core Requirements
Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)
**Business Communications**
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

**Major Courses**
- HRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
- HRIR 3041 - Organizational Behavior: Work Motivation and Workplace Dynamics (2.0 cr)
- HRIR 3051 - Compensation: Theory and Practice (2.0 cr)
- HRIR 3071 - Union Organizing and Labor Relations (2.0 cr)
- HRIR 3111 - Human Resource Analytics (2.0 cr)
- HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)

**Electives**
Take 8 or more credit(s) from the following:
- HRIR 3032 - Training and Development (2.0 cr)
- HRIR 3042 - Organizational Behavior: Groups and Teams (2.0 cr)
- HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
- HRIR 5000 - Topics in HRIR (2.0 cr)
- HRIR 5222 - Creating and Managing Diversity and Inclusion (2.0 cr)
- HRIR 5252 - Employment and Labor Law for the HRIR Professional (2.0 cr)
- HRIR 5442 - Employee Performance Management: Strategies, Systems, and Skills (2.0 cr)
- HRIR 5443 - Principles of Effective Coaching (2.0 cr)
- HRIR 5655 - Public Policies on Work and Pay (3.0 cr)
- HRIR 5662 - Personnel Economics (2.0 cr)
- INS 4101 - Employee Benefits (2.0 cr)
- GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)

**International Experience**
Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

**Program Sub-plans**
A sub-plan is not required for this program.

**Integrated BS in Business/Master in HRIR**
This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year, and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year will be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits will be applied to the MHRIR degree, including HRIR 6001, 6111, 6401, 6441, and 6805.

To complete the BSB HRIR major, students must also complete HRIR 3111, HRIR 4100W, and at least 4 elective credits that do not duplicate the courses in the Integrated Degree Program.

Student will finish their MHRIR in the fifth year of the integrated program.
BSB/Masters Human Resources and Industrial Relations

Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major.

**Fall semester, Year 4**
- Students will complete HRIR 6301 in place of HRIR 3031 and 3032.
- **HRIR 6301** - Staffing, Training, and Development (4.0 cr)
- **HRIR 6001** - Business Principles for the HRIR Professional (4.0 cr)
- **HRIR 6111** - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- **HRIR 6805** - HRIR Leadership Practicum (0.5 cr)

**Spring semester, Year 4**
- Students will take:
  - HRIR 6401 and 6441 in place of HRIR 3041 and 3042
  - HRIR 6701 in place of HRIR 3071 and 3072
  - HRIR 6501 in place of HRIR 3051
  - HRIR 6805 is completed in both semesters.
- **HRIR 6401** - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- **HRIR 6441** - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- **HRIR 6701** - Labor Relations and Collective Bargaining (4.0 cr)
- **HRIR 6501** - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Human Resources and Industrial Relations Minor
Industrial Relations Center
Curtis L. Carlson School of Management

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15

See major description for more information.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students pursuing a BSB degree in the Carlson School of Management or students pursuing the human resource development major in the College of Education and Human Development.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Human Resource Management
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Minor Requirements
A minimum of 3 credits in the minor must be completed at the University of Minnesota Twin Cities campus.

Minor
Required courses
Take 3 or more course(s) totaling 6 or more credit(s) from the following:
• HRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
• HRIR 3051 - Compensation: Theory and Practice (2.0 cr)
• HRIR 3041 - Organizational Behavior: Work Motivation and Workplace Dynamics (2.0 cr)
• HRIR 3071 - Union Organizing and Labor Relations (2.0 cr)

Electives
Choose an additional 6 credits from the elective list below or required list above.
HRD majors may not take HRIR 3032 or HRIR 5222 as part of the minor as they duplicate courses that are required in the HRD major.
Take 6 or more credit(s) from the following:
• GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
• HRIR 3032 - Training and Development (2.0 cr)
• HRIR 3042 - Organizational Behavior: Groups and Teams (2.0 cr)
• HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
• HRIR 3111 - Human Resource Analytics (2.0 cr)
• HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
• HRIR 5000 - Topics in HRIR (2.0 cr)
• HRIR 5222 - Creating and Managing Diversity and Inclusion (2.0 cr)
• HRIR 5252 - Employment and Labor Law for the HRIR Professional (2.0 cr)
• HRIR 5442 - Employee Performance Management: Strategies, Systems, and Skills (2.0 cr)
• HRIR 5443 - Principles of Effective Coaching (2.0 cr)
• HRIR 5655 - Public Policies on Work and Pay (3.0 cr)
• HRIR 5662 - Personnel Economics (2.0 cr)
• INS 4101 - Employee Benefits (2.0 cr)
Twin Cities Campus
International Business B.S.B.
CSOM Strategic Mgmt & Entrepre
Curtis L. Carlson School of Management

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 71 to 85
• Degree: Bachelor of Science in Business

The international business co-major supports a primary major by providing students with exposure to international breadth in areas such as economics and globalization and deepens their knowledge of a given region by a semester study abroad, language proficiency, and coursework specific to where they are studying. The student learns how business is done within a culture and the importance of understanding the nuances of working across multiple cultures. Students who desire to work in international business will often begin in their primary major and with experience and language skills, move into roles where they have responsibility for working with partners or offices internationally.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 3.00 transferring from another University of Minnesota college
• 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Tool Courses
Microeconomics
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
ECON 1102 - Principles of Macroeconomics (4.0 cr)
or APEC 1102 - Principles of Macroeconomics (3.0 cr)

Calculus
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students are required to take 4 semester(s) of any second language.

The international business major must be completed with another major within the Carlson School.

At least 24 upper division major credits must be taken at the University of Minnesota Twin Cities.

Lower Division Requirements

Management
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors will complete MGMT 3001 instead.

MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)

Corporate Responsibility & Ethics

MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

Psychology

PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Career Skills

BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core

Students complete the Immersion Core as a cohort.

SCO 3001 - Supply Chain and Operations (3.0 cr)
MGMT 3004 - Business Strategy (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors:Principles of Marketing (3.0 cr)

Additional Core Requirements

Information Systems

IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Human Resources

HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Managerial Accounting

ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

Business Communication

MGMT 3033W - Business Communication [WI] (3.0 cr)
IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

International Business Foundations
The International Business Foundation courses must be completed at the Carlson School. Courses may not count in more than one area of Depth, Breadth, or Business Foundations.

MGMT 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
MGMT 4500 - Senior Seminar in International Business (2.0 cr)

Take 2 or more course(s) from the following:
• ACCT 5310 - International Accounting (2.0 cr)
• FINA 4621 - The Global Economy (Macro) (2.0 cr)
• FINA 4622 - International Finance (2.0 cr)
• MGMT 3900 - International Business Communication [GP] (3.0 cr)
• MGMT 4031 - Industry Analysis in a Global Context (2.0 cr)
• MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
• IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
• IBUS 3055 - Innovating with Technology: Global IT Entrepreneurship in Action (4.0 cr)
• IBUS 3090 - International Business Special Topics (2.0 - 4.0 cr)
• IBUS 4050 - Management of Innovation and Change (4.0 cr)
• IBUS 4082W - Brand Management [WI] (4.0 cr)
• IBUS 4125 - Global Banking: A Survey of Regulatory and Competitive Developments Post Financial Crisis (2.0 cr)

International Environment Breadth
Choose two courses from the breadth category that are either on this list or approved to be taken abroad. Courses should be global in nature.

The courses satisfying the IB Breadth may not be double counted in the Depth or Business Foundation area.

Take 2 or more course(s) from the following:
• AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
• ANTH 3003 - Cultural Anthropology (3.0 cr)
• ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
• ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
• ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
• APEC 5751 - Global Trade and Policy (3.0 cr)
• ECON 4401 - International Economics [GP] (3.0 cr)
• GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
• GCC 3003 - Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
• GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• GLOS 3602 - In Other Worlds: Globalization and Culture (3.0 cr)
• POL 3410 - Topics in Comparative Politics (3.0 cr)
• POL 3835 - International Relations [SOCS, GP] (3.0 cr)
• POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
• GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
• HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
• GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• GLOS 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3321 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)

International Business Environment Depth
Choose two courses for the depth category from the list or approved to be taken abroad. Courses should be focused on a specific topic and/or region and should align with your primary major or the country of your study abroad.

Students may choose to complete a 3000 level business language course for this category. Internship courses from your study abroad
program may also fulfill this area. The courses satisfying the IB Depth may not be double counted in the Breadth or Business Foundation. Take 2 or more course(s) from the following:

- **ACCT 5310** - International Accounting (2.0 cr)
- **ANTH 3005W** - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
- **FINA 4621** - The Global Economy (Macro) (2.0 cr)
- **FINA 4622** - International Finance (2.0 cr)
- **GEOG 3161** - Europe: A Geographic Perspective [GP] (3.0 cr)
- **GER 3651** - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
- **GER 3655** - Cultures of Control and Surveillance in Germany and the US [HIS, CIV] (3.0 cr)
- **MGMT 3900** - International Business Communication [GP] (3.0 cr)
- **MKTG 4080W** - Marketing Strategy [WI] (4.0 cr)
- **MM 3001W** - Manufacturing in the Global Economy [WI] (3.0 cr)
- **MM 4035** - Global Supply Chain Management (3.0 cr)
- **OLPD 3381** - Developing Intercultural Competence (3.0 cr)
- **PA 4414** - Child Human Rights: Work and Education (3.0 cr)
- **POL 3477** - Political Economy of Development [SOCS, GP] (3.0 cr)
- **POL 4481** - Comparative Political Economy: Governments and Markets (3.0 cr)
- **PSY 3301** - Introduction to Cultural Psychology (3.0 cr)
- **SPAN 3105W** - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- **ANTH 3023** - Culture and Society of India [GP, SOCS] (3.0 cr)
  or **GLOS 3961** - Culture and Society of India [GP, SOCS] (3.0 cr)
- **EAS 3468** - Social Change in Modern China (3.0 cr)
  or **HIST 3468** - Social Change in Modern China (3.0 cr)
- **GEOG 3379** - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  or **GLOS 3303** - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- **GLOS 3415W** - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  or **SOC 3417W** - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)

**International Experience**

Students in the International Business major will complete a study abroad experience of at least one full semester in length. F-1 visa holders will have this requirement fulfilled.

**Upper Division Writing Intensive within the major**

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- **AGRO 3203W** - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- **ANTH 4031W** - Anthropology and Social Justice [CIV, WI] (4.0 cr)
- **ANTH 3005W** - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
- **GEOG 3381W** - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- **GLOS 3415W** - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
  or **IBUS 4082W** - Brand Management [WI] (4.0 cr)
  or **IBUS 3033W** - Business Communication in Spain [WI] (4.0 cr)
  or **MGMT 3033W** - Business Communication [WI] (3.0 cr)
  or **MKTG 4080W** - Marketing Strategy [WI] (4.0 cr)
  or **SPAN 3105W** - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
  or **SOC 3417W** - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- **MM 3001W** - Manufacturing in the Global Economy [WI] (3.0 cr)

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Information current as of September 02, 2020
Twin Cities Campus
International Business Minor
CSOM Strategic Mgmt & Entrepre
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 12 to 18

The international business minor provides students with a vital foundation for success in today’s global business environment. It enhances any functional major with a broad understanding of the additional complexity and contingencies required when conducting business across international borders.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
This minor is only available for students who are completing a BSB degree in the Carlson School of Management.

Additional language beyond high school is highly recommended but not required for the minor.

International Business Foundation
Mgmt 3040 must be completed at the Carlson School of Management.
MGMT 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
Take 2 or more course(s) from the following:
- ACCT 5310 - International Accounting (2.0 cr)
- FINA 4621 - The Global Economy (Macro) (2.0 cr)
- FINA 4622 - International Finance (2.0 cr)
- MGMT 3900 - International Business Communication [GP] (3.0 cr)
- MGMT 4031 - Industry Analysis in a Global Context (2.0 cr)
- MGMT 4500 - Senior Seminar in International Business (2.0 cr)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
- IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
- IBUS 3055 - Innovating with Technology: Global IT Entrepreneurship in Action (4.0 cr)
- IBUS 3080 - Sustainability and Corporate Social Responsibility in Costa Rica (4.0 cr)
- IBUS 3090 - International Business Special Topics (2.0 - 4.0 cr)
- IBUS 4125 - Global Banking: A Survey of Regulatory and Competitive Developments Post Financial Crisis (2.0 cr)

International Environment Breadth
Choose two courses from the IB Breadth list or approved from abroad. Courses should be global in nature and not focused on a specific region or topic.

Students may choose to use a depth course from the International Business Co-major for one requirement in this section. A student may choose one depth and one breadth, or two breadth. 3000 level business language courses are an option for the IB minor.
Take 2 or more course(s) from the following:
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- ANTH 3003 - Cultural Anthropology (3.0 cr)
- ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
- ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
- ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
• APEC 5751 - Global Trade and Policy (3.0 cr)
• ECON 4401 - International Economics [GP] (3.0 cr)
• GCC 3001 - Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
• GCC 3003 - Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
• GCC 3031 - The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• GLOS 3602 - In Other Worlds: Globalization and Culture (3.0 cr)
• POL 3410 - Topics in Comparative Politics (3.0 cr)
• POL 3835 - International Relations [SOCS, GP] (3.0 cr)
• POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
• GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
  or HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
• GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  or GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
  or SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)

International Experience Requirement
An international experience requirement that meets the Carlson School's requirement of all students will fulfill the minor requirement.
Twin Cities Campus
Management Information Systems B.S.B.
Information & Decision Sciences
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 80
- Degree: Bachelor of Science in Business

The management information systems (MIS) major prepares students to plan for, design, use, and manage digital assets of an organization. Digital assets of a modern business environment involve not only technology but also the IT-enabled processes governing business activities as well as the associated information/knowledge acquisition, processing, synthesis, management, and transfer processes. MIS coursework prepares students to make better decisions by applying information technologies to solve business problems and transform enterprise operations and to innovate and manage business processes in different functional areas through the best use of the technological infrastructure of an organization. The collective impact of the coursework is to enable students to understand the role of technology in creating business opportunities and to acquire the skills necessary for the functional management of the tasks needed to secure those opportunities.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five-tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Tool Courses
Microeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  - or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  - or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
  - or APEC 1102 - Principles of Macroeconomics (3.0 cr)

Calculus
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
  - or MATH 1271 - Calculus I [MATH] (4.0 cr)
  - or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  - or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  - or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
  - or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  - or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
  - or STAT 3022 - Data Analysis (4.0 cr)
  - or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 50% (23 cr) of the upper division major credits must be completed at the University of Minnesota Twin Cities campus.

Lower Division Requirements
Management
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)

Corporate Responsibility
MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Career Skills
BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immiscion Core
Students complete the Immersion Core as a cohort.
While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core.
SCG 3001 - Supply Chain and Operations (3.0 cr)
MGMT 3004 - Business Strategy (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

Additional Core Requirements
Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

Business Communication
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major Courses
IDSC 3101 - Introduction to Programming (2.0 cr)
IDSC 3102 - Intermediate Programming (2.0 cr)
IDSC 3103 - Data Modeling and Databases (2.0 cr)
IDSC 3104 - Enterprise Systems (2.0 cr)
IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)
IDSC 4204W - Strategic Information Technology Management [WI] (4.0 cr)
IDSC 4301 - MIS in Action: A Capstone Course (2.0 cr)

Electives
IDSc 4493, Directed Study in Information Systems, may be considered for elective credit with department approval. Case competition credit may not fulfill elective credit.
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• IBUS 3055 - Innovating with Technology: Global IT Entrepreneurship in Action (4.0 cr)
• IDSC 3511 - Pitching Business Strategy (2.0 cr)
• IDSC 4161 - Python for Business Applications (2.0 cr)
• IDSC 4401 - Information Security (2.0 cr)
• IDSC 4411 - Information Technology Governance and Assurance (2.0 cr)
• IDSC 4431 - Advanced Database Design (2.0 cr)
• IDSC 4441 - Electronic Commerce (2.0 cr)
• IDSC 4444 - Descriptive and Predictive Analytics (2.0 cr)
• IDSC 4455 - Web 2.0: The Business of Social Media (2.0 cr)
• IDSC 4471 - Agile Methods (2.0 cr)
• IDSC 4490 - Information Systems Special Topics (2.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short term or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• IDSC 4204W - Strategic Information Technology Management [WI] (4.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS in Business/Master in HRIR
This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the M.HRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to HRIR 3041 and 3042. HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.
BSB/Masters Human Resources and Industrial Relations

Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

**Fall semester, Year 4**
- HRIR 6301 - Staffing, Training, and Development (4.0 cr)
- HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
- HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

**Spring semester, Year 4**
- HRIR 6805 is taken both terms.
- HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
- HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Management Information Systems Minor
Information & Decision Sciences
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

See the major for a detailed description.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Minor Requirements
A minimum of 3 credits in the minor must be taken at the University of Minnesota Twin Cities Campus.

Minor Requirements
IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)

Electives
IDSC 4493, Directed Study in Information Systems may be considered for elective credit with department approval. Case competition credit may not fulfill elective credit.

Take 3 or more course(s) totaling 8 or more credit(s) from the following:
- IBUS 3055 - Innovating with Technology: Global IT Entrepreneurship in Action (4.0 cr)
- IDSC 3101 - Introduction to Programming (2.0 cr)
- IDSC 3102 - Intermediate Programming (2.0 cr)
- IDSC 3103 - Data Modeling and Databases (2.0 cr)
- IDSC 3104 - Enterprise Systems (2.0 cr)
- IDSC 4161 - Python for Business Applications (2.0 cr)
- IDSC 4204W - Strategic Information Technology Management [WI] (4.0 cr)
- IDSC 4301 - MIS in Action: A Capstone Course (2.0 cr)
- IDSC 4401 - Information Security (2.0 cr)
- IDSC 4411 - Information Technology Governance and Assurance (2.0 cr)
- IDSC 4431 - Advanced Database Design (2.0 cr)
- IDSC 4441 - Electronic Commerce (2.0 cr)
- IDSC 4444 - Descriptive and Predictive Analytics (2.0 cr)
- IDSC 4455 - Web 2.0: The Business of Social Media (2.0 cr)
- IDSC 4471 - Agile Methods (2.0 cr)
- IDSC 4490 - Information Systems Special Topics (2.0 cr)
Twin Cities Campus
Management Minor
Curtis L. Carlson School of Management - Adm
Curtis L. Carlson School of Management

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 26 to 28

The management minor is available to students enrolled in an undergraduate program outside of the Carlson School on the Twin Cities campus of the University of Minnesota. In addition to giving students broad exposure to the basic elements of business and management, the minor is an excellent preparation for law school, an MBA program, and many career fields.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 3 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
• 3.00 already admitted to the degree-granting college
• 3.00 transferring from another University of Minnesota college
• 3.00 transferring from outside the University

Students are admitted on a rolling basis and are encouraged to apply for the minor as soon as they have completed microeconomics, business statistics, and college algebra.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Economics, Math, and Statistics Courses
ECON 1102 is recommended but not required.

Economics
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Math
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or a higher level math course may be taken in place of MATH 1031.

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or BIOL 3272 - Applied Biostatistics (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
Minor Requirements
At least 3 upper-division credits that satisfy requirements for the minor at the campus that will award the minor

Minor Courses
Accounting
- ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)
  or ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
  • MGMT 3001 - Fundamentals of Management (3.0 cr)
  • SCO 3001 - Supply Chain and Operations (3.0 cr)
  • PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
  • PA 4101 - Nonprofit Management and Governance (3.0 cr)
  • ACCT 3001 - Introduction to Management Accounting (3.0 cr)
    or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)
  • FINA 3001 - Finance Fundamentals (3.0 cr)
    or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
  • HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
    or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
    or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)
  • IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
    or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)
  • MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
    or IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
  • MKTG 3001 - Principles of Marketing (3.0 cr)
    or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)
Twin Cities Campus
Marketing B.S.B.
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 77 to 83
- Degree: Bachelor of Science in Business

Marketing is about understanding customers. Marketers create, communicate and deliver value with the goal of satisfying customers’ needs. Marketers include puzzle solvers, data scientists, consumer psychologists, and inspired innovators.

* Marketers are investigative, identifying unfulfilled needs and desires.
* Marketers are analytically-driven, quantifying the size of markets and potential for profits.
* Marketers are strategic, pinpointing how a company can win in a competitive environment.
* Marketers are creative, designing and promoting appealing products and services.

Job opportunities in marketing include product or brand management, consulting, customer insights, analyzing markets, sales and business development, and advertising and media communications.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Tool Courses

Microeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
  or APEC 1102 - Principles of Macroeconomics (3.0 cr)

Calculus
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
  or MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
  or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
  or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 50% (24 cr) of the upper division major credits must be taken at the University of Minnesota Twin Cities campus.

Lower Division Requirements
Management
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)

Corporate Responsibility & Ethics
MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Career Skills
BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core
Students complete the Immersion Core as a cohort. While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core.
SCO 3001 - Supply Chain and Operations (3.0 cr)
MGMT 3004 - Business Strategy (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

Additional Core Requirements
Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

Business Communication
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major requirements

Required courses

MKTG 3010 - Marketing Research (4.0 cr)
MKTG 3040 - Buyer Behavior (4.0 cr)
MKTG 4080W - Marketing Strategy [WI] (4.0 cr)

Electives

Students must choose at least 4 credits from the Foundational electives and 4 credits from the Marketing Analysis elective. The remaining credits can be chosen from either category.

Take 12 or more credit(s) from the following:

Foundational Electives

Take 4 or more credit(s) from the following:

• MKTG 4030 - Sales Management (4.0 cr)
• MKTG 4050 - Advertising and Promotion (4.0 cr)
• MKTG 4060 - Marketing Channels (4.0 cr)
• MKTG 4085 - Nudge: Improving Decisions about Health, Wealth, and Happiness (2.0 cr)
• MKTG 4082W - Brand Management [WI] (4.0 cr)
or IBUS 4082W - Brand Management [WI] (4.0 cr)

Marketing Analysis Electives

Take 4 or more credit(s) from the following:

• MKTG 3005 - Introduction to Applying Analytical Tools for Solving Business Problems (2.0 cr)
• MKTG 4072 - Marketing-in-Action: Marketing Practicum (4.0 cr)
• MKTG 4074 - Data-Driven Marketing (4.0 cr)
• MKTG 4076 - Digital Marketing (2.0 cr)
• MKTG 4090 - Marketing Topics (2.0 - 4.0 cr)

International Experience

Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

• MGMT 3033W - Business Communication [WI] (3.0 cr)
• MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
• MKTG 4082W - Brand Management [WI] (4.0 cr)
• IBUS 4082W - Brand Management [WI] (4.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Integrated BS in Business/Master in HRIR

This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year, and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the MHRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to...
HRIR 3041 and 3042, HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.

BSB/Masters Human Resources and Industrial Relations

Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

**Fall semester, Year 4**
- HRIR 6301 - Staffing, Training, and Development (4.0 cr)
- HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
- HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
- HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

**Spring semester, Year 4**
- HRIR 6805 is taken both terms.
- HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
- HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
- HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Marketing Minor
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

See major description for more information.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available for students earning a BSB degree in the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Principles of Marketing
  MKTG 3001 - Principles of Marketing (3.0 cr)

Minor Requirements
At least 3 credits of upper-division coursework in the minor must be completed at the University of Minnesota Twin Cities campus.

Minor Courses
  MKTG 3010 - Marketing Research (4.0 cr)
  MKTG 3040 - Buyer Behavior (4.0 cr)

Electives
Take 4 or more credit(s) from the following:
  • MKTG 3005 - Introduction to Applying Analytical Tools for Solving Business Problems (2.0 cr)
  • MKTG 4030 - Sales Management (4.0 cr)
  • MKTG 4050 - Advertising and Promotion (4.0 cr)
  • MKTG 4060 - Marketing Channels (4.0 cr)
  • MKTG 4072 - Marketing-in-Action: Marketing Practicum (4.0 cr)
  • MKTG 4074 - Data-Driven Marketing (4.0 cr)
  • MKTG 4076 - Digital Marketing (2.0 cr)
  • MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
  • MKTG 4085 - Nudge: Improving Decisions about Health, Wealth, and Happiness (2.0 cr)
  • MKTG 4090 - Marketing Topics (2.0 - 4.0 cr)
  • MKTG 4082W - Brand Management [WI] (4.0 cr)
  or IBUS 4082W - Brand Management [WI] (4.0 cr)
Twin Cities Campus  
Public & Nonprofit Management B.S.B  
CSOM Strategic Mgmt & Entrepre  
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 74 to 79
- Degree: Bachelor of Science in Business

The nonprofit sector is one of the most important components of American life, yet one of the most misunderstood. Nonprofit organizations vary enormously in scope and scale, ranging from grassroots charitable groups, to multimillion-dollar foundations, universities, and health care organizations. There is little doubt that every American is directly or indirectly touched by the services of nonprofits in their daily life.

The nonprofit major blends general management-focused courses from the Carlson School with nonprofit-focused courses from the Humphrey Institute of Public Affairs. All students complete an additional major within Carlson; therefore, every student is able to apply their functional specialty of business to the intricacies of the nonprofit sector.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five-tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework, but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Tool Courses
Microeconomics
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Macroeconomics
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- or APEC 1102 - Principles of Macroeconomics (3.0 cr)

Calculus
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- or STAT 3022 - Data Analysis (4.0 cr)
- or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
ar SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
This major may only be completed as a second major within the Carlson School.

Lower Division Requirements

Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Management
Students who enter the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors take MGMT 3001 instead.
MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)

Corporate Responsibility & Ethics
MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)

Career Skills
BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core
Students complete the immersion core as a cohort.

While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core

SCO 3001 - Supply Chain and Operations (3.0 cr)
MGMT 3004 - Business Strategy (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors: Principles of Marketing (3.0 cr)

Additional Core Requirements

Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)

Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
or IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

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Information current as of September 02, 2020
Business Communication
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major requirements
PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
PA 4101 - Nonprofit Management and Governance (3.0 cr)
MGMT 4000 - Social Venturing in Action (4.0 cr)

Nonprofit elective
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• PA 3001 - Changing the World: Contemporary Public Policy (3.0 cr)
• PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
• PA 3990 - General Topics in Public Policy (1.0 - 3.0 cr)
• PA 5123 - Philanthropy in America: History, Practice, and Trends (1.5 - 3.0 cr)

Business Elective
Take 8 or more credit(s) from the following:
• GCC 3003 - Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• GCC 3011 - Pathways to Renewable Energy [TS] (3.0 cr)
• GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
• GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
• GCC 3028 - Harnessing the power of research, community, clinic and policy to build a culture of health [DSJ] (3.0 cr)
• GCC 5034 - How Can We Transition Minnesota to a Carbon-Free Economy? [TS] (3.0 cr)
• MGMT 4008 - Entrepreneurial Management (4.0 cr)
• MGMT 4040 - Negotiation Strategies (4.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 5018 - Philanthropy & Fundraising Strategy (2.0 cr)
• PA 5927 - Effective Grantwriting for Nonprofit Organizations (1.5 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
  or IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
• MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
  or IBUS 4050 - Management of Innovation and Change (4.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
Twin Cities Campus
Risk Management and Insurance Minor
Finance
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 19

See Finance & Risk Management major description for more information.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students who are pursuing a BSB degree in the Carlson School or to students who are pursuing an actuarial science emphasis in the math major.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisites
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)

Minor Requirements
At least 3 upper-division credits in the minor must be completed at the University of Minnesota Twin Cities.

Minor Courses
INS 4100 - Corporate Risk Management (2.0 cr)
INS 4101 - Employee Benefits (2.0 cr)
INS 4200 - Insurance Theory and Practice (2.0 cr)

Electives
Take 6 or more credit(s) from the following:
- ACCT 5101 - Intermediate Accounting I (4.0 cr)
- BLAW 3061 - Business Law Basics (2.0 cr)
- BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
- FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
- FINA 4122 - Banking Institutions (2.0 cr)
- FINA 4221 - Principles of Corporate Finance (2.0 cr)
- FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
- FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
- FINA 4325 - Behavioral Finance (2.0 cr)
- FINA 4329 - Security Analysis Capstone (2.0 cr)
- FINA 4425 - Financial Modeling (2.0 cr)
- FINA 4522 - Options & Derivatives I (2.0 cr)
- FINA 4529 - Derivatives II Capstone (2.0 cr)
- FINA 4621 - The Global Economy (Macro) (2.0 cr)
- FINA 4622 - International Finance (2.0 cr)
- FINA 4920 - FinanceTopics (2.0 - 4.0 cr)
- FINA 5422 - Financial Econometrics and Computational Methods I (2.0 cr)
- FINA 5423 - Financial Econometrics and Computational Methods II (2.0 cr)
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
Strategic Management Minor
CSOM Strategic Mgmt & Entrepre
Curtis L. Carlson School of Management

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

Strategic management involves decisions about the set of goal-directed, coordinated commitments, and actions that a firm undertakes to gain and sustain superior performance relative to competitors. It includes diagnosing the competitive challenges facing a firm, formulating strategies (including corporate, business, international, etc) to address the competitive challenges, and devising a coherent set of actions to implement a firms strategy.

Knowledge of strategic management complements students mastery of particular functional or operational areas, and allows Carlson graduates to understand how their functional roles and activities in a firm relate to the firms overall strategic objectives. The Strategic Management minor will thus enhance students value to their organizations.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Business Strategy
MGMT 3004 - Business Strategy (3.0 cr)

Minor Requirements
Strategic Management minor requirements
MGMT 4031 - Industry Analysis in a Global Context (2.0 cr)
MGMT 4032 - Corporate Strategy (2.0 cr)

Elective Courses
Students choose at least two courses from the following electives.
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
- MGMT 4033 - Strategy Implementation (2.0 cr)
- MGMT 4034 - Technology Strategy (2.0 cr)
- MGMT 4035 - Mergers & Acquisitions Strategy (2.0 cr)
- MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
  or IBUS 4050 - Management of Innovation and Change (4.0 cr)

Additional Electives
Students should choose 4 additional credits from the list below or from the elective list above.
Take 4 or more credit(s) from the following:
- FINA 4221 - Principles of Corporate Finance (2.0 cr)
- FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
- IDSC 3511 - Pitching Business Strategy (2.0 cr)
- IDSC 4444 - Descriptive and Predictive Analytics (2.0 cr)
- IDSC 4455 - Web 2.0: The Business of Social Media (2.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
- MGMT 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
- MGMT 4040 - Negotiation Strategies (4.0 cr)
- MKTG 3010 - Marketing Research (4.0 cr)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
- SCO 3041 - Project Management (2.0 cr)
- SCO 3072 - Managing Technologies in the Supply Chain (2.0 cr)
- SCO 4065W - Supply Chain and Operations Strategy [WI] (4.0 cr)
• **MKTG 4082W** - Brand Management [WI] (4.0 cr)
  or **IBUS 4082W** - Brand Management [WI] (4.0 cr)
Twin Cities Campus
Supply Chain & Operations Management B.S.B.
Supply Chain & Operations
Curtis L. Carlson School of Management

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 75 to 80
• Degree: Bachelor of Science in Business

Supply chain and operations (SCO) professionals manage the flow of goods, services, and information both within and across organizations. In every organization and in every industry, SCO professionals make sure that products get made, services are provided, and customers are satisfied. SCO professionals:

  - tackle sustainability challenges, including efficient use of resources and responsible sourcing.
  - take a broad view of business by collaborating across functions and organizations.
  - are practical problem solvers and figure out better ways to get work done.
  - are curious about how things work and like to be hands-on.
  - have diverse career options, ranging from positions using strong people-facing communication skills to positions that require detailed analytics.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 3.00 transferring from another University of Minnesota college
• 3.00 transferring from outside the University

Students in the school have no restrictions on declaring the major but must complete the five tool courses before continuing with the major requirements. Students from outside of the school must meet overall admission standards to enter this major, including completion of microeconomics, macroeconomics, and calculus prior to admission. Transfer students will also need to complete statistics and financial accounting before starting on the major coursework but may do so after admission.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

**Tool Courses**

- Microeconomics
  - ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  - APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  - APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

- Macroeconomics
  - ECON 1102 - Principles of Macroeconomics (4.0 cr)
  - APEC 1102 - Principles of Macroeconomics (3.0 cr)

- Calculus
  - MATH 1142 - Short Calculus [MATH] (4.0 cr)
  - MATH 1271 - Calculus I [MATH] (4.0 cr)
  - MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
  - MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

- Accounting
  - ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  - ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

- Statistics
  - SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
  - STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  - STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or STAT 3022 - Data Analysis (4.0 cr)
or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)
or EE 3025 - Statistical Methods in Electrical and Computer Engineering (3.0 cr)
or CEGE 3102 - Uncertainty and Decision Analysis (3.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or STAT 4101 - Theory of Statistics I (4.0 cr)
or STAT 4102 - Theory of Statistics II (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)
or STAT 5102 - Theory of Statistics II (4.0 cr)
or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 50% (23 cr) of the upper division major credits must be completed at the University of Minnesota Twin Cities campus.

Lower Division Requirements
Management
Students entering the program as freshmen or sophomores take MGMT 1001. Students who transfer in as juniors complete MGMT 3001 instead.
MGMT 1001 - Contemporary Management (3.0 cr)
or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
Corporate Responsibility and Ethics
MGMT 1005 - Corporate Responsibility and Ethics [CIV] (3.0 cr)
or MGMT 1005H - Corporate Responsibility and Ethics [CIV] (3.0 cr)
Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
Career Skills
BA 3000 - Career Skills (1.0 cr)
or IBUS 3006 - Global Career Skills (2.0 cr)

Immersion Core
Students complete the Immersion Core as a cohort.

While not currently required, students are strongly encouraged to complete BA 1001 Analyzing Business Problems Using Excel, prior to taking the Immersion Core.

Financial Accounting
MGMT 3004 - Business Strategy (3.0 cr)
SCO 3001 - Supply Chain and Operations (3.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
or FINA 3001H - Honors: Finance Fundamentals (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3001H - Honors:Principles of Marketing (3.0 cr)

Additional Core Requirements
Information Systems
IDSC 3001 - Introduction to Information Technology in Business (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)
Human Resources
HRIR 3021 - Human Resource Management and Strategy (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Strategy (3.0 cr)
or IBUS 3021 - Human Resource Management and Strategy in Australia (4.0 cr)
Managerial Accounting
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
IBUS 3002 - Managerial Accounting in Argentina and Chile (4.0 cr)

Business Communication
MGMT 3033W - Business Communication [WI] (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Major Requirements
SC 3056 - Supply Chain Planning and Control (4.0 cr)
SC 3059 - Quality Management and Lean Six Sigma (4.0 cr)
SC 3045 - Sourcing and Supply Management (2.0 cr)
SC 3048 - Transportation and Logistics Management (2.0 cr)
SC 3072 - Managing Technologies in the Supply Chain (2.0 cr)
SC 4065W - Supply Chain and Operations Strategy [WI] (4.0 cr)

Electives
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- BLAW 3062 - Contract Law and Corporate Regulation (2.0 cr)
- IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)
- MGMT 4040 - Negotiation Strategies (4.0 cr)
- MKTG 4060 - Marketing Channels (4.0 cr)
- SCO 3041 - Project Management (2.0 cr)
- SCO 3051 - Service Management (2.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students are encouraged to start planning with their advisor early in the program.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- SC 4065W - Supply Chain and Operations Strategy [WI] (4.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Integrated BS in Business/Master in HRIR
This integrated program provides a unique opportunity for Carlson students to obtain an advanced degree more quickly and prepare themselves to lead in the shifting landscape of the global marketplace. The integrated program would allow Carlson undergraduate students to complete both their B.S.B. and their MHRIR in a total of five years.

Students will follow a normal Carlson undergraduate curriculum for their first three years. They would apply for the MHRIR program by February 1st of their junior year and they would begin the MHRIR program as part of the MHRIR first-year cohort in the fall of their senior year. The senior year would have the integrated program students in all the first-year MHRIR core courses and the remaining undergraduate courses to complete their undergraduate degree.

Twelve credits of the MHRIR first-year would be applied to the undergraduate degree, including HRIR 6301, 6701, and 6501. Thirteen credits would apply to the M.HRIR degree, including HRIR 6001, 6401, 6441, and 6805.

Students will finish their MHRIR in the fifth year of the integrated program.

HRIR minors: please note that HRIR 6301 is considered equivalent to HRIR 3031 and 3032, HRIR 6401 and 6441 are equivalent to HRIR 3041 and 3042, HRIR 6701 is equivalent to HRIR 3071 and 3072, and HRIR 6501 is equivalent to HRIR 3051. It is recommended that students do not take the equivalent undergraduate HRIR courses if they plan to pursue the integrated degree.

BSB/Masters Human Resources and Industrial Relations
Students in the BSB/M.HRIR integrated degree program should complete the following courses in their senior year. These courses meet requirements for the Masters in Human Resources and Industrial Relations and twelve credits of the BSB Human Resources major/minor.

Fall semester, Year 4
HRIR 6301 - Staffing, Training, and Development (4.0 cr)
HRIR 6001 - Business Principles for the HRIR Professional (4.0 cr)
HRIR 6111 - Using Data and Metrics in Human Resources and Industrial Relations (4.0 cr)
HRIR 6805 - HRIR Leadership Practicum (0.5 cr)

Spring semester, Year 4
HRIR 6805 is taken both terms.
HRIR 6401 - Organizational Theory Foundations of High-Impact HRIR (2.0 cr)
HRIR 6441 - Organizational Behavior Foundations of High-Impact HRIR (2.0 cr)
HRIR 6701 - Labor Relations and Collective Bargaining (4.0 cr)
HRIR 6501 - Compensation and Benefits (4.0 cr)
Twin Cities Campus
Dental Hygiene B.S.D.H.
School of Dentistry - Adm

School of Dentistry

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 99 to 111
- This program requires summer terms.
- Students will have some clinical experiences in community clinics affiliated with the University of MN, School of Dentistry.
- Degree: Bachelor of Science in Dental Hygiene

Within the University's liberal arts curriculum, the baccalaureate program provides advanced knowledge and practice in both general university courses and dental hygiene theory and research methodology. It prepares the dental hygienist to assume roles in many different healthcare environments, such as general and specialty practices, public schools, community health clinics, insurance companies, dental hygiene educational programs, extended care facilities, and in the health products industry.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 30 credits before admission to the program.

Freshmen students are usually admitted to pre-major status before admission to this major.

All prerequisite courses must be taken A-F. Biology and chemistry must be taken within five years of entry into the program and one or the other must be completed prior to application, so grades are on the transcript submitted at the time of application. In addition, applicants are strongly encouraged to have completed composition and psychology and/or sociology prior to application so grades are on the transcript submitted at the time of application.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Dental Hygiene Admissions Requirements: Fall (16 cr.)

Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Chemistry
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

Composition
WRIT 1301 - University Writing (4.0 cr)

Dental Hygiene Admissions Requirements: Spring (11 cr.)

Physiology
PHSL 3051 - Human Physiology (4.0 cr)

Human Anatomy
ANAT 3001 - Human Anatomy (3.0 cr)
or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
or ANAT 3611 - Principles of Human Anatomy (3.0 cr)

Sociology
SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
Dental Hygiene Admissions Requirements: Summer (3-4 cr.)

Statistics

STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)

or

STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

or

STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

The BS in dental hygiene requires that students take six consecutive terms of courses, including summer terms.

Students must complete a minimum of 30 upper division major credits at the University of Minnesota Twin Cities.

Term 1: Fall

DH 2121 - The Dental Hygiene Care Process Clinical Application I (5.0 cr)
DH 2132 - Head and Neck Anatomy (2.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)

Term 2: Spring

DH 2212 - Communication for Oral Health Providers (2.0 cr)
DH 2221W - Periodontology [WI] (3.0 cr)
DH 2222 - Dental Hygiene Care Process Clinical Application II (4.0 cr)
DH 3125 - General and Oral Pathology (2.0 cr)
DH 3151 - Oral and Maxillofacial Radiology (2.0 cr)
DH 2225 - Microbiology, Immunology, and Oral Health (3.0 cr)

Term 3: Summer

DH 3121 - Local Anesthesia and Pain Management (2.0 cr)
DH 3123 - The Dental Hygiene Care Process Clinical Application III (4.0 cr)
DH 3133 - Pharmacology (2.0 cr)

Term 4: Fall

DH 2231 - Cariology and Applied Nutrition in Dental Hygiene Care (3.0 cr)
DH 3224W - Dental Hygiene Care Process: Clinical Application IV [WI] (6.0 cr)
DH 3228 - Ethics and Jurisprudence for the Dental Hygienist (1.0 cr)
DH 3234 - Oral and Maxillofacial Radiology: Theory, Principles, and Radiographic Analysis (1.0 cr)
DH 3238 - Dental Public Health and Academic Service Learning (3.0 cr)

Term 5: Spring

DH 4105 - Dental Professional Development (1.0 cr)
DH 4125W - Dental Hygiene Care Process: Clinical Application V [DSJ, WI] (6.0 cr)
DH 4135W - Research Methods in Dental Hygiene [WI] (3.0 cr)
DH 4136 - Periodontology III Lecture (1.0 cr)
DH 4139 - Dental Public Health and Academic Service Learning II (2.0 cr)

Term 6: Summer

DH 4234 - Leadership and Professional Development (2.0 cr)
DH 4226 - Dental Hygiene Care Process Clinical Application VI (6.0 cr)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

• DH 3224W - Dental Hygiene Care Process: Clinical Application IV [WI] (6.0 cr)
• DH 4125W - Dental Hygiene Care Process: Clinical Application V [DSJ, WI] (6.0 cr)
• DH 4135W - Research Methods in Dental Hygiene [WI] (3.0 cr)
Program Sub-plans
Students are required to complete one of the following sub-plans.

**Dental Hygiene B.S.**

**Term 1: Fall**
- DH 2111 - Dental Anatomy, Embryology & Histology (3.0 cr)

**Term 3: Summer**
- DH 3134 - Pediatric Dentistry (1.0 cr)
- DH 3211 - Biomaterials and Principles of Restorative Techniques I (4.0 cr)

**Term 6: Summer**
- DH 4211 - Principles of Restorative Techniques II (3.0 cr)

**Integrated Bachelor of Science Dental Hygiene/Master of Dental Therapy**

Integrated degree program students will learn alongside dental and dental hygiene students in a team environment. This collegial approach to education ensures a solid educational and clinical preparation. Additionally, the team-based clinical model in the School of Dentistry strives to improve the efficiency of how oral health services are delivered by maximizing the knowledge and skill-set of each provider. The School of Dentistry team-based care model is guided by the need to improve the patient experience, improve the oral health of populations and lower the costs of care. The program prepares the dually trained individual to assume roles in many different health care environments, such as general and specialty practices, public schools, community health clinics, insurance companies, dental hygiene and dental therapy educational programs, extended care facilities, and in the health products industry.

IDP BSDH/MDT students must complete all requirements indicated as prerequisites, BSDH program requirements, and IDP BSDH/MDT requirements. IDP BSDH/MDT students do not need to complete the courses identified in the Dental Hygiene BS sub-plan.

Students are expected to complete their undergraduate BSDH degree after the completion of Term 6, and then continue on to complete the MDT over the following three terms. All courses indicated in this sub-plan do not apply to the undergraduate degree and will be transferred to the graduate transcript.

**Term 1: Fall**
- BSDH students complete the following courses to meet the master's requirements for this term.
  - DT 5430 - Oral Anatomy (2.0 cr)
  - DT 5431 - Oral Anatomy Laboratory (3.0 cr)

**Term 2: Spring**
- BSDH students complete the following courses to meet the master's requirements for this term.
  - DT 5135 - Preclinical Pediatric Dentistry (2.0 cr)
  - DT 5432 - Operative Dentistry I (1.0 cr)
  - DT 5433 - Operative Dentistry I Pre-Clinic Laboratory (2.0 cr)
  - DT 5410 - Biomaterials Science I (1.0 cr)

**Term 3: Summer**
- BSDH students complete the following courses to meet the master's requirements for this term.
  - DT 5471 - Prosthodontic Topics for Dental Therapy (2.0 cr)
  - DT 5435 - Operative Dentistry II for the Dental Therapist, Lab (1.0 cr)
  - DT 5434 - Operative Dentistry II Lecture (1.0 cr)

**Term 4: Fall**
- BSDH students complete the following courses to meet the master's requirements for this term.
  - DT 4415 - Essentials of Clinical Care I: Introduction (1.0 cr)

**Term 5: Spring**
- BSDH students complete the following courses to meet the master's requirements for this term.
  - DT 5321 - Treatment Planning for the Dental Therapist (1.0 cr)
  - DT 4460 - Essentials of Clinical Care I For the Dental Therapist (3.0 cr)

**Term 6: Summer**
- BSDH students complete the following courses to meet the master's requirements for this term. IDP BSDH/MDT students complete their undergraduate degree at the successful completion of this term.
  - DT 4965 - Essentials of Clinical Care for the Dental Therapist III (4.0 cr)

**Term 7: Fall**
- MDT students will now only take MDT courses towards their MA degree. The following course meets the master's requirements for this term.
  - DT 5162 - Principles of Exodontia and Minor Oral Surgery (1.0 cr)
  - DT 5465 - Essentials of Clinical Care for the Dental Therapist IV (10.0 cr)
  - DT 5360 - Outreach Experiences I (1.0 cr)
  - DT 5005 - Dental Therapy Capstone Project I (1.0 cr)

**Term 8: Spring**
MDT students complete the following courses to meet the master's requirements for this term.

**DT 5105 - Dental Therapy Capstone Project II (1.0 cr)**

**DT 5141 - Clinical Pediatric Dentistry III (2.0 cr)**

**DT 5320 - Comprehensive Care Clinic (4.0 cr)**

**DT 5361 - Outreach Experiences II (2.0 cr)**

**DT 5443 - Operative Clinic III (4.0 cr)**
**Twin Cities Campus**

**Apparel Design B.S.**

*Design, Housing & Apparel*

**College of Design**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 77
- Degree: Bachelor of Science

Apparel design students learn to design, produce, and market apparel and wearable products by developing the creative thinking and technical expertise to address contemporary issues while using industry technologies, communicating design ideas, and gaining an understanding of the global apparel industry. The program incorporates custom design and industry production approaches and trains designers to create products that effectively address both fashion and function. The program focuses on a research-based design process used by many design industries, and courses incorporate industry-sponsored projects and community service projects. Studio courses closely replicate the professional working methods of apparel designers. In addition to providing a strong liberal arts curriculum, courses offer essential background in costume history, consumer behavior, and social and cultural meanings of apparel. A required internship and mentor experience provides students with professional experience. An annual fashion show presents students' achievements to the professional community.

Students enter the program as pre-apparel design majors. To attain full major status, they must complete eight required pre-apparel design courses with a grade of at least C-, maintain a 2.50 GPA, and pass a competitive portfolio review.

To complete the major, students must take six sequential apparel design studio courses. They are also encouraged to use the liberal education categories to explore multicultural themes and to strengthen knowledge that supports their major coursework.

Graduates of the program work in various settings, including product development and quality assurance for large retail companies, product design for small and large manufacturers, protective clothing and wearable technology design, theater and film design, and custom design.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

Students must complete 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Admission to the pre-major status is done by a competitive holistic review. Students must maintain a GPA of 2.50 during pre-major coursework. In addition, students must receive a minimum grade of C- or better in the required pre-major courses before going through portfolio review (not just a 2.50 GPA). Once students have achieved major status, they must maintain a GPA of 2.00.

Students must pass a portfolio review to be admitted into the degree program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**Required prerequisites**

**Pre-Apparel Design Courses**

Students must demonstrate competence in basic apparel construction skills by successfully completing ADES 1221.

Note: Students must be admitted to pre-major status to take most of these courses.

- ADES 1221 - Apparel Assembly Fundamentals (3.0 cr)
- ADES 2211 - Fashion Illustration and Portfolio Development (4.0 cr)
- ADES 2221 - Apparel Design Studio I (4.0 cr)
DES 1001 - Introducing the College of Design (1.0 cr)
DES 2101 - Design and Visual Presentation (2.0 cr)
GDES 1312 - Foundations: Color and Design in Two and Three Dimensions (4.0 cr)
RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
All coursework in the major must be taken A-F (with the exception of the internship). At least 20 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Communication Course
WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
or ENGL 3027W - The Essay [WI] (4.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)

Major Courses
ADES 2213 - Textile Analysis (4.0 cr)
ADES 2222 - Apparel Design Studio II (4.0 cr)
ADES 3217 - Fashion: Trends and Communication (3.0 cr)
ADES 3223 - Apparel Design Studio III (4.0 cr)
ADES 3224W - Apparel Design Studio IV [WI] (4.0 cr)
ADES 3225 - Apparel Design Research (1.0 cr)
ADES 3227 - Technical Design Studio (4.0 cr)
ADES 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
ADES 4196 - Internship in Apparel Design (1.0 - 4.0 cr)
ADES 4215 - Product Development: Softlines (4.0 cr)
ADES 4225 - Apparel Design Studio V (4.0 cr)
DES 3201 - Career and Internship Preparation for Design (1.0 cr)
GDES 3312 - Color and Form in Surface Design (4.0 cr)
RM 2215 - Introduction to Retail Merchandising (3.0 cr)
RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)
DES 5185 - Human Factors in Design (3.0 cr)
or GDES 4330 - Surface Fabric Design Workshop (4.0 cr)
or ADES 3196 - Field Study: National or International (1.0 - 10.0 cr)
or ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
or PDES 2701 - Creative Design Methods (3.0 cr)
or PDES 2702 - Concept Sketching (3.0 cr)
or PDES 2777 - Product Form and Model Making (3.0 cr)
or PDES 3704 - Computer-Aided Design 1: Solid Modeling and Rendering (3.0 cr)
or PDES 3711 - Product Innovation Lab (4.0 cr)
or PDES 3715 - Design and Food (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
• ADES 3224W - Apparel Design Studio IV [WI] (4.0 cr)
• ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
• ENGL 3027W - The Essay [WI] (4.0 cr)
• RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Architecture B.D.A.
School of Architecture
College of Design

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 72
• Degree: Bachelor of Design in Architecture

In the Bachelor of Design in Architecture (BDA) program, students take a broad approach to design as it relates to architecture. Students learn to think through architecture, often in ways and with projects not necessarily tied to the traditional building scale or to building systems. Students use the lens of architecture to address a broad range of issues within the discipline and practice of architecture and as a bridge to other disciplines and modes of practice. Students develop verbal and visual skills in architecture, and practice the design process as a dialogue between divergent and convergent making and thinking. They undertake projects that link architecture with explorations in visual media (including film, photography, virtual reality), social, cultural and environmental concerns (preservation, disaster relief, neighborhood needs), focused concerns (daylight, facade, material, or modeling studies), and allied disciplines (set design, landscape architecture, urban studies).

All major coursework must be taken A-F.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 30 credits before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 2.80 already admitted to the degree-granting college
• 2.80 transferring from another University of Minnesota college
• 2.80 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite Courses, Primary Core
Student must complete the following classes prior to admission to the BDA program.
ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
ARCH 1621W - Introduction to Critical Inquiry in Practice [WI] (3.0 cr)
ARCH 2281 - Design Fundamentals II (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
The Architecture BDA requires 9 upper-division (3xxx-level or higher) credits outside College of Design designators. These include:
ARCH, ADES, DES, GDES, IDES, LA, PDES, RM.

At least 24 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.
BDA Primary Core
NOTE: Students must complete Arch 2301 prior to Design Core requirements.
Take 3 or more course(s) from the following:
- ARCH 2301 - Drawing and Critical Thinking (4.0 cr)
- ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
- ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
  or ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)

Design Core - Design Workshops
Topics of courses will vary each semester. Students repeat the courses in order to complete the 9 credit minimum.
Take 9 or more credit(s) from the following:
- ARCH 3231 - Intensive Applications Design Workshop (3.0 cr)
- ARCH 3291 - Extensive Applications Design Workshop (3.0 cr)

Design Core - Advanced Design Workshops
Topics of courses will vary each semester. Students repeat the courses in order to complete the 9 credit minimum.
Take 9 or more credit(s) from the following:
- ARCH 4231 - Advanced Intensive Applications Design Workshop (3.0 cr)
- ARCH 4291 - Advanced Extensive Applications Design Workshop (3.0 cr)

Architecture Electives
Take 9 or more credit(s) from the following:
- ARCH 3xxx
- ARCH 4xxx
- ARCH 5xxx
- LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)

BDA Secondary Core
These courses provide introductions to curricular core areas within the school.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- ARCH 3511 - Material Transformations: Technology and Change in the Built Environment [TS] (3.0 cr)
- ARCH 4451 - Contemporary Architectural Thinking (3.0 cr)
- ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
- ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
  or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)

Architecture History / Theory Electives
Take 6 or more credit(s) from the following:
- ARCH 4421W - Architecture and Interpretation: The Cave and the Light [WI] (3.0 cr)
  or ARCH 4423 - Gothic Architecture (3.0 cr)
  or ARCH 4424 - Renaissance Architecture (3.0 cr)
  or ARCH 4425W - Baroque Architecture [WI] (3.0 cr)
  or ARCH 4428 - History and Culture of European Cities [HIS, GP] (3.0 cr)
  or ARCH 4432 - Modern Architecture (3.0 cr)
  or ARCH 4434 - Contemporary Architecture (3.0 cr)
  or ARCH 4410 - Topics in Architectural History (1.0 - 4.0 cr)

Upper-division Electives Outside the College
Take 9 credits upper-division credits (3xxx-level or higher) outside the College of Design designators. These include: ARCH, ADES, DES, DDES, IDES, LA, PDES, RM.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
- ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
- ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
- ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- ARCH 4425W - Baroque Architecture [WI] (3.0 cr)
- ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Accelerated
The accelerated option allows a limited number of qualified undergraduates to complete the BDA and M.Arch in six rather than seven years. Accepted students complete year one of the M.Arch during their senior year. Some M.Arch courses satisfy upper division BDA requirements: graduate technology for 3 cr. BDA secondary core; graduate history for 3 cr. BDA history elective; and graduate design studio for 6 cr. advanced BDA design workshop; remaining graduate credits may satisfy general elective credits.
Students accepted must substantially complete BDA requirements before their senior year, and have a program plan in place verifying that undergraduate degree program requirements will be met by the end of the senior year.
Accelerated status is granted on a competitive basis. Applications are due to the college registrar January 15 for enrolling in graduate courses the following fall term. Eligibility is based on program GPA (courses with ARCH designator) and overall UMN GPA; preferred program GPA is 3.8 or higher. Application includes: an APAS report, writing samples, three recommendation letters, a design portfolio, and a program plan for completing the BDA degree within the first year of the professional program coursework.
Accelerated students apply for M.Arch advanced standing during normal graduate application (see school website) and must be accepted by the School of Architecture and the Graduate School. Students may choose to update and resubmit application materials.
Twin Cities Campus
Architecture B.S.
School of Architecture
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 98
- Degree: Bachelor of Science

The bachelor of science (with a major in architecture) is a pre-professional architecture degree program that offers studio-based design education and a rigorous program of history/theory and building technology courses. The program exposes students to the formal, socio-cultural, material, environmental, and historical factors that shape built environments. The BS program fosters a sense of stewardship for local and global built environments by providing opportunities for students to engage with College of Design faculty and research centers, to enroll in service learning courses, and to study abroad. Design education in the BS program is structured around five sequential semester-long design studios. Each studio is a focused study in one of architecture’s core areas: 1. material assemblies, 2. site and the designed environment, 3. program and typology, 4. metropolitan design, and 5. advanced design. Through hands-on making and complementary courses, students demonstrate how these core areas affect formal, spatial, and experiential qualities of architectural space.

BS students develop visual literacy through design thinking and the development of design processes in design studios by engaging spatial representation in drawing and computational courses, by researching historical precedents and theoretical texts in history and theory seminars, and by exploring concepts of sustainability and resilience in technology courses. The BS program fosters a sense of stewardship of local and global built environments by providing opportunities for students to engage with College of Design faculty and research centers, to engage in design-build activities, to enroll in service learning courses, and to study abroad.

Students are eligible to apply to the BS degree program from within the College of Design after completing all required first-year courses. Admission is competitive, with a portfolio, transcripts, and an essay included in the application process. Students in the BS will take five required 6-credit design studios, a sequence of history/theory and building technology courses, and 9 credits of upper-level architecture electives. Graduates of the BS are well prepared to apply to the second year of the School of Architecture’s master’s of architecture graduate program; master’s of science degree programs in sustainability, heritage preservation and conservation, and metropolitan design; as well as other graduate degree programs at peer institutions, per their admissions requirements.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 30 credits before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major.

A GPA above 2.0 is preferred for the following:
- 2.80 already admitted to the degree-granting college
- 2.80 transferring from another University of Minnesota college
- 2.80 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Prerequisite Courses, Primary Core
It is required that students complete the following classes prior to admission to the BS:
ARCH 1621W - Introduction to Critical Inquiry in Practice [WI] (3.0 cr)
ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
ARCH 2281 - Design Fundamentals II (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 38 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Major coursework
- ARCH 2301 - Drawing and Critical Thinking (4.0 cr)
- ARCH 3281 - Undergraduate Architecture Studio I (6.0 cr)
- ARCH 3282 - Undergraduate Architecture Studio II (6.0 cr)
- ARCH 4283 - Undergraduate Architecture Studio III (6.0 cr)
- ARCH 4284 - Undergraduate Architecture Studio IV (6.0 cr)
- ARCH 4511 - Materials and Methods I (3.0 cr)
- ARCH 4521 - Environmental Technology I (3.0 cr)
- ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
- ARCH 4571 - Architectural Structures I (3.0 cr)
- ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
- ARCH 5212 - Undergraduate Architecture Studio 05: Advanced Design (6.0 cr)
- ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
- ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
- ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)

Courses to be completed prior to year three of the program
Calculus
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
Physics
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)

Architectural history elective
- ARCH 4421W - Architecture and Interpretation: The Cave and the Light [WI] (3.0 cr)
or ARCH 4423 - Gothic Architecture (3.0 cr)
or ARCH 4424 - Renaissance Architecture (3.0 cr)
or ARCH 4425W - Baroque Architecture [WI] (3.0 cr)
or ARCH 4428 - History and Culture of European Cities [HIS, GP] (3.0 cr)
or ARCH 4432 - Modern Architecture (3.0 cr)
or ARCH 4434 - Contemporary Architecture (3.0 cr)
or Arch 44xx Architecture History

Architecture electives
Nine upper division architecture credits not used elsewhere.
Take exactly 9 credit(s) from the following:
• ARCH 3xx
• ARCH 4xx
• ARCH 5xx

Upper division credits outside the major
Take 9 upper division credits outside the major

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
• ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
• ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CiV, WI] (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CiV, WI] (3.0 cr)
• ARCH 4421W - Architecture and Interpretation: The Cave and the Light [WI] (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
Twin Cities Campus
Architecture Minor
School of Architecture
College of Design

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 19

An undergraduate minor in architecture introduces the foundational ideas of the discipline as social, cultural, historic, and environmental constructs.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
A maximum of 9 transfer credits may be used toward the minor. A maximum of three courses taken for a major may also be used toward the minor. Students must earn a C- or better in all minor coursework.

Architecture minor coursework
ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
  or ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
Take 2 or more course(s) from the following:
• ARCH 3611 - Design in the Digital Age (3.0 cr)
• ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
• ARCH 4671 - Historic Preservation (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)

Architecture electives
Take 2 or more course(s) from the following:
• ARCH 3xxx
• ARCH 4xxx
Twin Cities Campus
Fashion Studies Minor
Design, Housing & Apparel

College of Design

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 16

The fashion studies minor provides students who have an interest in fashion the opportunity to gain knowledge about fashion product, theory, and industry specific practices. Fashion is a major global industry with a broad range of career opportunities from business and design to engineering and chemistry.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
This major is not available for apparel design or retail merchandising majors. Transfer courses must be approved by the fashion studies minor advisor. No more than one transfer course may be used toward the minor. Transfer coursework may be accepted for prerequisite courses upon review: this is not included in the one-course limit.

Required courses
ADES 3217 - Fashion: Trends and Communication (3.0 cr)
ADES 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)

Choose two courses from this list
Take 2 or more course(s) totaling 5 or more credit(s) from the following:
- RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
- ADES 2214 - Softlines Analysis (3.0 cr)
- RM 2215 - Introduction to Retail Merchandising (3.0 cr)
- ADES 3196 - Field Study: National or International (1.0 - 10.0 cr)
- ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
- ADES 2213 - Textile Analysis (4.0 cr)
Twin Cities Campus
Graphic Design B.F.A.
Design, Housing & Apparel
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 80
- Degree: Bachelor of Fine Arts

The graphic design program educates students in design thinking, user-centered design methods, design theory, creative problem solving, and visual and verbal literacy. An emphasis is placed on visual components: how humans communicate, perceive, interpret, and understand visual information. The program fosters flexibility, which enables graduates to adapt to social, cultural, and technological change in graphic design. The program’s foundation is broadly based. Students begin with courses in fundamental aspects of visual studies. Upper division courses prepare them for graphic design positions in print and electronic media. An internship of 1 to 3 credits is required.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 5 courses before admission to the program.

Freshman and transfer students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Admission to pre-major status is decided by a competitive holistic review. Students must maintain an overall GPA of 2.50 during pre-major coursework. In addition, students must receive a minimum grade of C- or better in the required pre-major courses before going through portfolio review (not just a 2.50 GPA). Once students have achieved major status, they must maintain a GPA of 2.00.

Students must be admitted to the pre-major status program to take most of the pre-graphic design coursework.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Pre-Graphic Design Courses
Take exactly 5 course(s) from the following:
- GDES 1311 - Foundations: Drawing and Design in Two and Three Dimensions (4.0 cr)
- GDES 1312 - Foundations: Color and Design in Two and Three Dimensions (4.0 cr)
- GDES 1315 - Foundations: The Graphic Studio (4.0 cr)
- DES 2101 - Design and Visual Presentation (2.0 cr)
- DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
  or DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 16 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.
External Core Classes Required By The Major

Introduction to Public Speaking or Storytelling and Design
Take exactly 1 course(s) from the following:
• COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or DES 3309 - Storytelling and Design (3.0 cr)

Business, Economics, or Marketing
Take exactly 1 course(s) from the following:
• ACCT 1xxx
• ACCT 2xxx
• ACCT 3xxx
• ACCT 4xxx
• ACCT 5xxx
• APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
• APEC 1102 - Principles of Macroeconomics (3.0 cr)
• APEC 1251 - Principles of Accounting (3.0 cr)
• ECON 1xxx
• ECON 2xxx
• ECON 3xxx
• ECON 4xxx
• ECON 5xxx
• MGMT 3xxx
• MKTG 3xxx

Grand Challenge or Diversity and Social Justice
Take exactly 1 course(s) from the following:
• GCC 3xxx
• GCC 5xxx
• Any course that fulfills the Diversity and Social Justice liberal education theme.

Advanced Graphic Design Requirements
Take exactly 13 course(s) from the following:
• GDES 2342 - Web Design (3.0 cr)
• GDES 2345 - Typography (4.0 cr)
• GDES 2399W - Design and Its Discontents: Design, Society, Economy, and Culture [WI] (3.0 cr)
or GDES 2399V - Design and Its Discontents: Design, Society, Economy, and Culture [WI] (3.0 cr)
• DES 3201 - Career and Internship Preparation for Design (1.0 cr)
• GDES 3351 - Text and Image (3.0 cr)
• GDES 3352 - Identity and Symbols (3.0 cr)
or GDES 3352H - Honors: Identity and Symbols (3.0 cr)
• GDES 3353 - Packaging and Display (3.0 cr)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GDES 4196 - Internship in Graphic Design (1.0 - 3.0 cr)
• GDES 4345 - Advanced Typography (4.0 cr)
• GDES 4361W - Thesis Studio and Writing [WI] (3.0 cr)
or GDES 4361V - Honors Thesis Studio and Writing [WI] (3.0 cr)
• GDES 4362 - Senior Thesis and Exhibition (3.0 cr)
or GDES 4362H - Senior Thesis and Exhibition (3.0 cr)
• GDES 4363 - Graphic Design Portfolio (3.0 cr)

Advanced Skills Courses
Students select two courses (of separate topics) from the four course options as program required Advanced Skills courses. If all three topics are taken, the third course will count as a GD Elective. Selected courses cannot be used for more than one major requirement. Note: if a student selects a Photography course as an Advanced Skills course, the other Photography course cannot be counted for the Electives requirements.
Take exactly 2 course(s) from the following:
Color & Form
• GDES 3312 - Color and Form in Surface Design (4.0 cr)

Data Visualization
• GDES 4371 - Data Visualization Studio (3.0 cr)

Photography
• GDES 2361 - Design Process: Photography (3.0 cr)
or ARTS 1701 - Introduction to Photography [AH] (4.0 cr)

Required Program Electives
Two of the three electives must be GDES designated courses. (ArtS 1701 can fulfill one of the required GDES designated courses)
Note: If a Photography course is selected as an Elective, the other Photography course cannot be counted for the Advanced Skills requirement.

Take exactly 3 course(s) from the following:

- DES 3131 - User Experience in Design (4.0 cr)
- DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
- DES 3311 - Travels in Typography (3.0 cr)
- DES 3351 - Phenomenon of Everyday Design (3.0 cr)
- DES 4165 - Design and Globalization [DSJ] (3.0 cr)
- DES 5168 - Evidence-Based Design (3.0 cr)
- DES 5185 - Human Factors in Design (3.0 cr)
- GDES 3311 - Illustration (3.0 cr)
- GDES 3312 - Color and Form in Surface Design (4.0 cr)
- GDES 4312 - Advanced Graphic Design Print Projects (3.0 cr)
- GDES 4330 - Surface Fabric Design Workshop (4.0 cr)
- GDES 4350 - Advanced Design Material Topics (3.0 cr)
- GDES 4371 - Data Visualization Studio (3.0 cr)
- GDES 5311 - Illustration (3.0 cr)
- GDES 5341 - Interaction Design (3.0 cr)
- GDES 5342 - Advanced Web Design (3.0 cr)
- GDES 5372 - Data Visualization for Interactive Platforms (3.0 cr)
- GDES 5383 - Digital Illustration and Animation (3.0 cr)
- GDES 5386 - Fundamentals of Game Design (3.0 cr)
- GDES 5388 - Graphic Design Research (3.0 cr)
- PDES 2701 - Creative Design Methods (3.0 cr)
- PDES 2702 - Concept Sketching (3.0 cr)
- PDES 3711 - Product Innovation Lab (4.0 cr)
- GDES 2361 - Design Process: Photography (3.0 cr)
  or ARTS 1701 - Introduction to Photography [AH] (4.0 cr)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- GDES 4131W - History of Graphic Design [WI] (4.0 cr)
- GDES 4361V - Honors Thesis Studio and Writing [WI] (3.0 cr)
- GDES 4361W - Thesis Studio and Writing [WI] (3.0 cr)
Twin Cities Campus

Housing and Community Development Minor
DHA Housing Studies
College of Design

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15

The housing and community development undergraduate minor allows students to study shelter in its multiple dimensions. Courses from which to select include content in physical, social, economic, and psychological aspects of housing in urban, rural, and global communities; public policy; housing development and financing; multifamily housing management; analysis of housing data; and housing for select populations.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
APPLICATIONS ARE NO LONGER ACCEPTED FOR THE HOUSING AND COMMUNITY DEVELOPMENT MINOR.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements

Minor Courses
HSG 3462 - Housing and Community Development (3.0 cr)

Students should take courses from the following to meet at least 12 credits.
Take 4 or more course(s) from the following:
- HSG 4461 - Housing Development and Management (4.0 cr)
- HSG 4465 - Housing in a Global Perspective (3.0 cr)
- HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
- HSG 5463 - Housing Policy (3.0 cr)
Twin Cities Campus
Interdisciplinary Design Minor
DESIGN Intrdiscp Assoc Dean
College of Design

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18

The interdisciplinary design minor is a program that shows how design can be used as a catalyst for exploration and research. Choosing from a selection of both lecture and studio courses, students are introduced to the history, theory, and practice of design across multiple design disciplines. With the interdisciplinary design minor, students may compose their own individual program in which they will understand the interdisciplinary nature of the design process, appreciate the role design plays in everyday life, experience design thinking and action, explore and expand their own design interests, and understand how to work with designers in their chosen field. The interdisciplinary design minor provides an integrated education in design where students enhance their learning by making connections between traditional design courses and nontraditional views of design.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Two courses may double-dip with the student's major or other minor. The minor requires a minimum of 18 total credits.

Category A: Introductory Design Thinking "Big Picture"
Choose one course from the list below. Courses from this category introduce students to the scope of design thinking. These courses combine lectures with projects or case studies.

DES 1000 - D@MN: Design@Minnesota [AH] (3.0 cr)
or DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)
or DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
or LA 1001 - Sustainability by Design [ENV] (3.0 cr)
or LA 1401 - The Designed Environment [AH] (3.0 cr)
or LA 1601 - Design and Equity [DSJ, AH] (3.0 cr)
or LA 3601 - Design and Equity [DSJ, AH] (3.0 cr)

Category B: Introductory Design Thinking "Hands-on"
Choose one course from the list below. Courses from this category introduce students to design thinking and making in a studio setting.

ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
or DES 1111 - Creative Problem Solving (3.0 cr)
or DES 1111H - Honors: Creative Problem Solving (3.0 cr)
or DES 2101 - Design and Visual Presentation (2.0 cr)
or GDES 1311 - Foundations: Drawing and Design in Two and Three Dimensions (4.0 cr)
or GDES 1312 - Foundations: Color and Design in Two and Three Dimensions (4.0 cr)
or GDES 1315 - Foundations: The Graphic Studio (4.0 cr)
or GDES 3312 - Color and Form in Surface Design (4.0 cr)
or LA 1301 - Introduction to Landscape Architecture Drawing [AH] (3.0 cr)
or ME 2111 - Introduction to Engineering (4.0 cr)
or PDES 2702 - Concept Sketching (3.0 cr)
or PDES 3711 - Product Innovation Lab (4.0 cr)

Category C: Electives
Courses from this category allow students to explore design from a variety of perspectives. Take three or four courses to complete the total required credits for the minor (18).

Take 3 or more course(s) totaling 10 or more credit(s) from the following:
• ADES 3217 - Fashion: Trends and Communication (3.0 cr)
• ADES 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
• ADES 4210W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
• ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 3411W</td>
<td>Architectural History to 1750 [HIS, GP, WI]</td>
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<td>ARCH 3412H</td>
<td>Honors: Architectural History Since 1750 [HIS, GP]</td>
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<td>ARCH 3511</td>
<td>Material Transformations: Technology and Change in the Built Environment [TS]</td>
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<td>ARCH 3611</td>
<td>Design in the Digital Age (3.0 cr)</td>
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<td>ARCH 3711V</td>
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<td>Environmental Design and the Sociocultural Context [SOCS, CIV, WI]</td>
<td>3.0 cr</td>
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<td>ARCH 4423</td>
<td>Gothic Architecture (3.0 cr)</td>
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<td>ARCH 4424</td>
<td>Renaissance Architecture (3.0 cr)</td>
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<td>ARCH 4425W</td>
<td>Baroque Architecture [WI]</td>
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<td>ARCH 4432</td>
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<td>ARCH 4434</td>
<td>Contemporary Architecture (3.0 cr)</td>
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<td>ARCH 4561</td>
<td>Architecture and Ecology [ENV]</td>
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<td>Introduction to Urban Form and Theory [WI]</td>
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<td>DES 1002</td>
<td>Improvisation for Design (3.0 cr)</td>
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<td>DES 3131</td>
<td>User Experience in Design (4.0 cr)</td>
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<td>DES 3141</td>
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<td>Topics in Design (1.0 - 4.0 cr)</td>
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<td>DES 3309</td>
<td>Storytelling and Design (3.0 cr)</td>
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<td>Travels in Typography (3.0 cr)</td>
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<td>DES 3321</td>
<td>Furniture Design: Exploration (3.0 cr)</td>
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<td>DES 3331</td>
<td>Street Life Urban Design Seminar (3.0 cr)</td>
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<td>DES 4165</td>
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<td>Topics in Design (1.0 - 4.0 cr)</td>
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<td>DES 5185</td>
<td>Human Factors in Design (3.0 cr)</td>
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<td>DES 5901</td>
<td>Principles of Wearable Technology (2.0 cr)</td>
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<td>DES 5902</td>
<td>Wearable Technology Laboratory Practicum (2.0 cr)</td>
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<td>Introduction to Computing Systems (4.0 cr)</td>
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<td>GCC 3015</td>
<td>Biospired Approaches to Sustainability - Greening Technologies and Lives [TS]</td>
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<td>GDES 2399W</td>
<td>Design and its Discontents: Design, Society, Economy, and Culture [WI]</td>
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<td>GDES 3311</td>
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<td>GDES 4131W</td>
<td>History of Graphic Design [WI]</td>
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<td>GDES 4330</td>
<td>Surface Fabric Design Workshop (4.0 cr)</td>
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<td>Data Visualization Studio (3.0 cr)</td>
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<td>Fundamentals of Game Design (3.0 cr)</td>
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<td>IDES 2612</td>
<td>Interior Materials and Specifications [ENV] (4.0 cr)</td>
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<td>IDES 3161</td>
<td>History of Interiors and Furnishings: Ancient to 1750 [GP] (4.0 cr)</td>
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<td>History of Interiors and Furnishings: 1750 to Present [HIS] (4.0 cr)</td>
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<td>Sustainable Commercial Interior Design (3.0 cr)</td>
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<td>Lighting Design Innovations and Technological Advances (3.0 cr)</td>
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<td>JOUR 3745</td>
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<td>LA 3413</td>
<td>Introduction to Landscape Architectural History [HIS, GP] (3.0 cr)</td>
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<td>LA 3501</td>
<td>Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)</td>
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<td>LA 3514</td>
<td>Making the Mississippi [CIV] (3.0 cr)</td>
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• LA 4755 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)
• PDES 2701 - Creative Design Methods (3.0 cr)
• PDES 2702 - Concept Sketching (3.0 cr)
• PDES 3705 - History and Future of Product Design (3.0 cr)
• PDES 3711 - Product Innovation Lab (4.0 cr)
• PDES 3715 - Design and Food (4.0 cr)
• RM 3243 - Visual Merchandising (3.0 cr)
• RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)
• RM 4248 - Creative Leadership in Retailing (3.0 cr)
Twin Cities Campus

Interior Design B.S.
Design, Housing & Apparel
College of Design

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 100 to 101
• Degree: Bachelor of Science

Interior design is a professional program accredited by the Council for Interior Design Accreditation (CIDA). Its focus is providing for human welfare by improving the quality of life and protecting human health and safety through design of the interior environment. Students study fundamentals, theory, process, communication, research, and technology to identify and solve problems related to people and their use of interior space. They analyze human behavior to determine a client's functional, aesthetic, social, and psychological needs. They design various types of interiors, such as hospitals, offices, schools, residences, restaurants, hotels, and entertainment facilities.

To do this, students acquire:
- A foundation in basic design;
- Understanding of the relationship between individuals and their environments;
- Understanding of the contextual relationship of the site, the building, and its systems to the interior;
- Knowledge of regulations that govern their practice of interior design;
- The ability to research user needs and apply findings to problem identification and solution;
- Understanding of historical precedent and contemporary design theories;
- Technical knowledge and communication skills;
- Understanding of business issues and professional ethics; and
- A sense of responsibility to society, especially in the use of resources.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 7 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
• 2.50 already admitted to the degree-granting college
• 2.50 transferring from another University of Minnesota college
• 2.50 transferring from outside the University

Admission to the pre-major status is done by a competitive holistic review. Students must maintain a GPA of 2.50 during pre-major coursework. In addition, students must receive a minimum grade of C- or better in the required pre-major courses before going through portfolio review (not just a 2.50 GPA). Once students have achieved major status, they must maintain a GPA of 2.00.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Pre-Interior Design Courses
Students must complete freshman composition and at least one additional liberal education course in addition to the required coursework below to be admitted to major status in the interior design program.

Note: Students must be admitted to a pre-major status to take most of these courses.
GDES 1311 - Foundations: Drawing and Design in Two and Three Dimensions (4.0 cr)
GDES 1312 - Foundations: Color and Design in Two and Three Dimensions (4.0 cr)
IDES 1601 - Interior Design Studio I (4.0 cr)
IDES 1602 - Interior Design Studio II (4.0 cr)
DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
 or DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Students must complete a 200-hour internship (IDES 4196) after completing IDES 3606. All coursework in the major must be taken A-F (with the exception of the internship).
At least 25 upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Communication Course
ENGL 3027W - The Essay [WI] (4.0 cr)
 or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
 or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
 or WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)

Psychology Course
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

Major Courses
ADES 2213 - Textile Analysis (4.0 cr)
ARTH 1001 - Introduction to Art History: Prehistoric to Contemporary [AH] (4.0 cr)
DES 3201 - Career and Internship Preparation for Design (1.0 cr)
DES 4165 - Design and Globalization [DSJ] (3.0 cr)
IDES 2603 - Interior Design Studio III (4.0 cr)
IDES 2604 - Interior Design Studio IV (4.0 cr)
IDES 2612 - Interior Materials and Specifications [ENV] (4.0 cr)
IDES 2613 - Interior Structures, Systems, and Life Safety (4.0 cr)
IDES 2622 - Computer Applications I (2.0 cr)
IDES 3161 - History of Interiors and Furnishings: Ancient to 1750 [GP] (4.0 cr)
IDES 3162 - History of Interiors and Furnishings: 1750 to Present [HIS] (4.0 cr)
IDES 3605 - Interior Design Studio V (4.0 cr)
IDES 3606 - Interior Design Studio VI (4.0 cr)
IDES 3612 - Lighting Design (3.0 cr)
IDES 3614 - Interior Design Ethics and Professional Practice [CIV] (4.0 cr)
IDES 3622 - Computer Applications II (2.0 cr)
IDES 4196 - Internship in Interior Design (1.0 cr)
IDES 4607 - Interior Design Studio VII (4.0 cr)
IDES 4608 - Interior Design Thesis (4.0 cr)
IDES 4615W - Interior Design Research [WI] (3.0 cr)
ARCH 3412W - Architectural History Since 1750 [HIS, GP, WI] (3.0 cr)
 or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
 or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- IDES 4615W - Interior Design Research [WI] (3.0 cr)
- ENGL 3027W - The Essay [WI] (4.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
 or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
Twin Cities Campus

Interior Environments Minor
DHA Interior Design
College of Design

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 15

The Interior Environments minor introduces students to the discipline's core principles and the question of how health and well-being are impacted by the social, cultural, historical, and technological forces behind the design of interior environments.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements

Required courses
IDES 2612 - Interior Materials and Specifications [ENV] (4.0 cr)
DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
  or DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)

History of Interiors
IDES 3161 - History of Interiors and Furnishings: Ancient to 1750 [GP] (4.0 cr)
  or IDES 3162 - History of Interiors and Furnishings: 1750 to Present [HIS] (4.0 cr)

Electives
Select one of the following courses to complete a minimum of 15 credits.
IDES 1601 - Interior Design Studio I (4.0 cr)
  or IDES 2613 - Interior Structures, Systems, and Life Safety (4.0 cr)
  or IDES 3614 - Interior Design Ethics and Professional Practice [CIV] (4.0 cr)
  or DES 4165 - Design and Globalization [DSJ] (3.0 cr)
  or IDES 4616 - Sustainable Commercial Interior Design (3.0 cr)
  or Interior history alternative

Students may complete IDES 3161 or IDES 3162 if not used for the minor requirement.
Twin Cities Campus
Landscape Design and Planning B.E.D.
Landscape Architecture
College of Design

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 64
• Degree: Bachelor of Environmental Design

Landscape design and planning focuses on the development of livable communities that sustain ecological function; fulfill human aspirations for community development, public health, and safety; and are artistically evocative and meaningful. Core courses in design and planning introduce students to the history, theory, and practice of landscape design and planning at various geographic scales and in diverse settings. Students explore integrative, collaborative, and aesthetic designs that conserve ecosystems services (land, water, air resources), protect biodiversity, and reduce dependence on fossil fuels, while enhancing human social interactions.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.80 already admitted to the degree-granting college
• 2.80 transferring from another University of Minnesota college
• 2.80 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 25 upper division credits in the major just be taken at the University of Minnesota Twin Cities campus.

Design
LA 1201 - Learning from the Landscape [AH, DSJ] (3.0 cr)
LA 1401 - The Designed Environment [AH] (3.0 cr)
LA 3001 - Understanding and Creating Landscape Space (4.0 cr)
LA 3002 - Informants of Creating Landscape Space (4.0 cr)
LA 3003 - Climate Change Adaptation (3.0 cr)
LA 4001 - Sustainable Landscape Design and Planning Practices (3.0 cr)
LA 4096 - Internship in Landscape Design and Planning (1.0 cr)
LA 4755 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)

Design Communication
LA 1301 - Introduction to Landscape Architecture Drawing [AH] (3.0 cr)
LA 2301 - Advanced Representation for Environmental Design (3.0 cr)

Landscape Planning
Prepares student for work planning sustainable landscapes at the urban and regional scale.
LA 3004 - Regional Environmental Landscape Planning (4.0 cr)
LA 3514 - Making the Mississippi [CIV] (3.0 cr)
Ecosystem Pattern and Process Core
These courses prepare students for work planning and designing sustainable landscape at the urban and regional scale. Courses are in urban geography, urban and regional planning, natural resource planning and management, as well as biological and physical sciences.

LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
LA 3204 - Holistic Landscape Ecology and Bioregional Practice (3.0 cr)
LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)

Ecosystem Pattern and Process Electives
In addition to the Ecosystem Pattern and Process core required courses, take 2 or more courses from the following:

BBE 3023 - Ecological Engineering Principles (3.0 cr)
CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
ESCI 3004 - Water and Society [ENV] (3.0 cr)
ESCI 3005 - Earth Resources (3.0 cr)
ESCI 4701 - Geomorphology (4.0 cr)
ESCI 4703 - Glacial Geology (4.0 cr)
ESCI 3003 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
ESCI 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
ESCI 3004 - Water and Society [ENV] (3.0 cr)
ESCI 3005 - Earth Resources (3.0 cr)
ESCI 4701 - Geomorphology (4.0 cr)
ESCI 4703 - Glacial Geology (4.0 cr)

Social and Cultural Systems Core
LA 3413 - Introduction to Landscape Architectural History [HIS, GP] (3.0 cr)
ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)

In addition to the Social and Cultural Systems Core courses, students take one course from the following list of electives:

ARCH 4671 - Historic Preservation (3.0 cr)
ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
DES 3331 - Street Life Urban Design Seminar (3.0 cr)
ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
FNRM 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
GEOG 5393 - Rural Landscapes and Environments (4.0 cr)
PA 4200 - Urban and Regional Planning (3.0 cr)
PA 5013 - Law and Urban Land Use (1.5 cr)
PA 5211 - Land Use Planning (3.0 cr)
PA 5221 - Private Sector Development (3.0 cr)
PA 5251 - Strategic Planning and Management (3.0 cr)
PA 5253 - Designing Planning and Participation Processes (3.0 cr)
URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)

Upper-division Writing Intensive within the major
Students are required to take one upper-division Writing Intensive course within the major. If that requirement has not been satisfied

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Information current as of September 02, 2020
within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
- HORT 4061W - Turfgrass Management [WI] (3.0 cr)
- URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
  or URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)

**Program Sub-plans**
A sub-plan is not required for this program.

**Integrated BED/MLA Program**
The integrated status option admits a limited number of students annually and allows qualified undergraduates to complete the B.E.D. and M.L.A. in six years rather than seven years.

Applicants for the integrated status must complete the first three years of the B.E.D. degree requirements before their senior year. Students must complete the first year of the professional degree program in their undergraduate senior year. These courses carry upper division credit and satisfy senior year B.E.D. requirements.

Integrated status is granted on a competitive basis and does not admit any student to the graduate professional program. Separate requirements, such as letters of recommendation, a letter of interest, and other application documents, must be submitted in January of the year that students are seeking admission to the graduate program. B.E.D. graduates who have completed the integrated status option and applied to the M.L.A. professional degree program will receive advanced standing in the M.L.A. program upon acceptance by the Department of Landscape Architecture and the Graduate School.
Twin Cities Campus
Landscape Design and Planning Minor
Landscape Architecture
College of Design

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 22

The landscape design and planning minor introduces students to the history, theory, and practice of landscape design and planning at various geographic scales and in diverse settings. Landscape design and planning focuses on the creation of livable communities that sustain ecological function, fulfill human aspirations for community development, public health, and safety, and are artistically evocative and meaningful.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements
A maximum of 9 transfer credits may be used for the minor and a maximum of three courses taken for a major degree may also be used toward the minor. A minimum grade of C- is required in all minor coursework.

Required courses
LA 1401 - The Designed Environment [AH] (3.0 cr)
LA 3001 - Understanding and Creating Landscape Space (4.0 cr)
LA 3003 - Climate Change Adaptation (3.0 cr)
LA 3413 - Introduction to Landscape Architectural History [HIS, GP] (3.0 cr)

Electives
Take 9 or more credit(s) from the following:
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
- LA 1201 - Learning from the Landscape [AH, DSJ] (3.0 cr)
- LA 1301 - Introduction to Landscape Architecture Drawing [AH] (3.0 cr)
- LA 2301 - Advanced Representation for Environmental Design (3.0 cr)
- LA 3002 - Informants of Creating Landscape Space (4.0 cr)
- LA 3004 - Regional Environmental Landscape Planning (4.0 cr)
- LA 3204 - Holistic Landscape Ecology and Bioregional Practice (3.0 cr)
- LA 3501 - Environmental Design and Its Biological and Physical Context [ENV] (3.0 cr)
- LA 3514 - Making the Mississippi [CIV] (3.0 cr)
- LA 3514 - The Designed Environment [AH] (3.0 cr)
- LA 3514 - Infrastructure, Natural Systems, and Space of Inhabited Landscapes [TS] (3.0 cr)
- LA 8302 - Professional Practice (3.0 cr)
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
   or ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
Twin Cities Campus  
Lighting Design Minor  
Design, Housing & Apparel  
College of Design  

- Program Type: Undergraduate free-standing minor  
- Requirements for this program are current for Fall 2020  
- Required credits in this minor: 12

The Lighting Design Minor provides an educational forum for students to engage regional lighting professionals, design practitioners, and industry representatives to study the evolving role of lighting design and technologies in professional practice. The coordination of lighting courses from Interior Design and Architecture provides an integrated approach to electric lighting, interior design, and daylighting. The minor enables students to gain insight into the relationship between interior and architectural design strategies.

Program Delivery  
This program is available:  
• via classroom (the majority of instruction is face-to-face)

Admission Requirements  
Students must complete 30 credits before admission to the program.  
For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements  
Required Courses  
IDES 3612 - Lighting Design (3.0 cr)  
IDES 4617 - Lighting Design Innovations and Technological Advances (3.0 cr)  

Lighting Internship  
Select one course. Minimum: 3 credits;  
On completion of required courses  
IDES 2196 - Work Experience in Interior Design (1.0 - 4.0 cr)  
or IDES 4193 - Directed Study in Interior Design (1.0 - 4.0 cr)

Electives  
Select one course  
TH 3541 - Introduction to Stage Lighting Design (3.0 cr)  
or ARCH 3261 - BDA: The Art of Daylighting Design: Exquisite Rooms (3.0 cr)
Twin Cities Campus
Product Design B.S.
DHA Product Design
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 87
- Degree: Bachelor of Science

The product design program is a creative, interdisciplinary major that blends elements of design, engineering, business, and humanities. This program provides methods and tools for inventing our future in the form of innovative objects, systems, and services. In addition to design fundamentals, this program is strengthened by the sciences. Combining these disciplines allows students to design desirable products and services (both physical and digital) that are also functional, marketable, and human-centered. This program enables students to take ideas from concept to reality and succeed in market.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Freshman and transfer students students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 already admitted to the degree-granting college
- 2.50 transferring from another University of Minnesota college

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites
Pre-major coursework
Courses to be completed prior to portfolio review to attain full major status.

- PDES 2701 - Creative Design Methods (3.0 cr)
- PDES 2702 - Concept Sketching (3.0 cr)
- PDES 2703 - Concept Visualization and Presentation 1 (3.0 cr)
- PDES 2777 - Product Form and Model Making (3.0 cr)
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)
  or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
  or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
Admission to the full major status program is determined by a competitive holistic review, which includes an interview, GPA, and a portfolio review after completion of pre-major coursework.

At least 19 credits upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Product Design Core
- DES 3201 - Career and Internship Preparation for Design (1.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
PDES 2704 - Concept Visualization and Presentation 2 (3.0 cr)
PDES 2771 - Product Design Studio 1 (4.0 cr)
PDES 2772 - Product Design Studio 2 (4.0 cr)
PDES 3704 - Computer-Aided Design 1: Solid Modeling and Rendering (3.0 cr)
PDES 3705 - History and Future of Product Design (3.0 cr)
PDES 3706 - Designing for Manufacture (4.0 cr)
PDES 3711 - Product Innovation Lab (4.0 cr)
PDES 3737 - Product Design Portfolio (2.0 cr)
PDES 3771 - Product Design Studio 3 (4.0 cr)
PDES 4701W - Capstone Research Studio [WI] (4.0 cr)
PDES 4702W - Capstone Design Studio [WI] (4.0 cr)
PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
  or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
  or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
EE 1301 - Introduction to Computing Systems (4.0 cr)
  or CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)

Internships
Students must perform one internship, 2 credits.
PDES 3196 - Product Design Internship (1.0 - 2.0 cr)

Electives
Take 2 - 3 course(s) totaling 6 - 8 credit(s) from the following:
  • ANTH 4035 - Ethnographic Research Methods (3.0 cr)
  or CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
  or DES 5185 - Human Factors in Design (3.0 cr)
  or DES 1002 - Improvisation for Design (3.0 cr)
  or DES 3131 - User Experience in Design (4.0 cr)
  or GDES 2342 - Web Design (3.0 cr)
  or GDES 3353 - Packaging and Display (3.0 cr)
  or ANTH 4121 - Business Anthropology (3.0 cr)
  or LAW 5026 - Intellectual Property and Technology Proseminar (1.0 cr)
  or ME 2011 - Introduction to Engineering (4.0 cr)
  or MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
  or MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
  or MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
  or ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
  or CSCI 3005 - Innovation for the Public Good; Post-Pandemic Venture Design [GP] (3.0 cr)
  or DES 3322 - Furniture Design, Practice (4.0 cr)
  or ARTS 3140 - Figure Drawing (4.0 cr)
  or PDES 3714 - Computer-Aided Design Methods 2: Surface Modeling and Rendering (3.0 cr)
  or PDES 3715 - Design and Food (4.0 cr)
  or MKTG 3001 - Principles of Marketing (3.0 cr)
  or SCO 3001 - Supply Chain and Operations (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
  • CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
  • MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
  • MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
  • PDES 4701W - Capstone Research Studio [WI] (4.0 cr)
  • PDES 4702W - Capstone Design Studio [WI] (4.0 cr)

Program Sub-plans
Students are required to complete one of the following sub-plans.

Integrated Product Development
Required Courses
  • ME 2011 - Introduction to Engineering (4.0 cr)
  • PDES 3714 - Computer-Aided Design Methods 2: Surface Modeling and Rendering (3.0 cr)
User Experience Design

**Required Courses**

- GDES 2342 - Web Design (3.0 cr)
- DES 3131 - User Experience in Design (4.0 cr)
Twin Cities Campus
Product Design Minor
Design, Housing & Apparel
College of Design

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 16

Product design is inherently creative and interdisciplinary, blending design, engineering, business, art, and other humanities. The program focuses on physically crafting the future in the form of new objects, systems and services. This minor will provide students with a tool set for innovation that can be applied to their major area of study.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
A GPA above 2.0 is preferred for the following:
• 2.80 already admitted to the degree-granting college
• 2.80 transferring from another University of Minnesota college

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements
The product design minor requires a minimum of 16 credits.

Required core
PDES 2701 - Creative Design Methods (3.0 cr)
PDES 2702 - Concept Sketching (3.0 cr)
PDES 3711 - Product Innovation Lab (4.0 cr)
or PDES 5711 - Product Innovation Lab (4.0 cr)
Take 6 or more credit(s) from the following:
• ANTH 4035 - Ethnographic Research Methods (3.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• ARTS 3890 - 3D Modeling and Digital Fabrication (4.0 cr)
• CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
• DES 1002 - Improvisation for Design (3.0 cr)
• DES 3131 - User Experience in Design (4.0 cr)
• DES 3321 - Furniture Design: Exploration (3.0 cr)
• DES 3322 - Furniture Design, Practice (4.0 cr)
• DES 5185 - Human Factors in Design (3.0 cr)
• EE 1301 - Introduction to Computing Systems (4.0 cr)
• ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
• GCC 3005 - Innovation for the Public Good: Post-Pandemic Venture Design [GP] (3.0 cr)
• LAW 5026 - Intellectual Property and Technology Proseminar (1.0 cr)
• MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
• MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
• MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
• PDES 3704 - Computer-Aided Design 1: Solid Modeling and Rendering (3.0 cr)
• PDES 3705 - History and Future of Product Design (3.0 cr)
• PDES 3715 - Design and Food (4.0 cr)
• PDES 4193 - Directed Study in Product Design (1.0 - 4.0 cr)
• SCO 3001 - Supply Chain and Operations (3.0 cr)
• ME 2011 - Introduction to Engineering (4.0 cr)
Twin Cities Campus
Public Interest Design Minor
DESIGN Intrdiscp Assoc Dean
College of Design

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2020
• Required credits in this minor: 18
• No

This minor explores the emerging field of public interest design. Public interest design refers to human-centered and participatory design practices that address ecological, economic, cultural, and social issues in design and design-related fields. This minor provides an integrated education in design where students enhance their learning by making connections between traditional design courses and important social, economic, and environmental issues.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
A maximum of two courses taken for a major may be used toward the public interest design minor. Up to a maximum of two study abroad or transfer courses may be used toward the minor and must be approved by the minor advisor.

Foundation Courses
ARCH 3756 - Public Interest Design: Principles and Practices (3.0 cr)

Core selectives
Students taking more than two of these courses can use the additional credits towards their elective requirement.
Take exactly 2 course(s) from the following:
Take 2 or more course(s) from the following:
• LA 1601 - Design and Equity [DSJ, AH] (3.0 cr)
• LA 3601 - Design and Equity [DSJ, AH] (3.0 cr)
• DES 3331 - Street Life Urban Design Seminar (3.0 cr)
• HSG 3462 - Housing and Community Development (3.0 cr)
• DES 3131 - User Experience in Design (4.0 cr)

Electives
Take 0 or more course(s) totaling 9 or more credit(s) from the following:

Deepen Understanding of Design Practice
Take 0 or more course(s) from the following:
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
• DES 3131 - User Experience in Design (4.0 cr)
• DES 3331 - Street Life Urban Design Seminar (3.0 cr)
• HSG 3462 - Housing and Community Development (3.0 cr)
• HSG 4461 - Housing Development and Management (4.0 cr)
• HSG 4465 - Housing in a Global Perspective (3.0 cr)
• HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
• LA 1001 - Sustainability by Design [ENV] (3.0 cr)
• LA 1601 - Design and Equity [DSJ, AH] (3.0 cr)
• LA 3003 - Climate Change Adaptation (3.0 cr)
• LA 3601 - Design and Equity [DSJ, AH] (3.0 cr)
• RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
• ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)

• Broaden Understanding of Public Interest Design’s Contexts
Take 0 or more course(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (3.0 cr)
• PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
• SW 2501W - Introduction to Social Justice [DSJ, WI] (4.0 cr)
• URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• **URBS 3871** - A Suburban World (3.0 cr)

**Develop Knowledge and Skills for PID Practice and Leadership**

Take 0 or more course(s) from the following:

- **PA 1401** - Public Affairs: Community Organizing Skills for Public Action [CIV] (3.0 cr)
- **CHIC 4275** - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
- **ABUS 4012** (Inactive) (3.0 cr)
- **FNRM 3101** - Park and Protected Area Tourism (3.0 cr)
- **HORT 3131** - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
- **PA 4101** - Nonprofit Management and Governance (3.0 cr)
- **ABUS 4571W** - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- **LEAD 1961W** - Personal Leadership in the University [WI] (3.0 cr)
Twin Cities Campus
Retail Merchandising B.S.
Design, Housing & Apparel
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 73
- Degree: Bachelor of Science

The retail merchandising program offers a wide range of educational and career opportunities, including visits to multinational retail enterprises, travel to foreign and domestic retail centers, and professional experiences, such as study abroad and internships with national and international retailers. Program graduates begin their careers in store or corporate environments. Entry-level positions include omni-channel retailing management, visual merchandising, fashion marketing, product development and brand management, sourcing and supply chain management, retail analytics and customer relationship management, store and human capital management, retail buying, advertising, and sales promotion.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Admission Requirements
Admission is competitive and space is limited.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
At least 15 credits upper division credits in the major must be taken at the University of Minnesota Twin Cities campus.

Required Retail Merchandising Basic Courses
- DES 1111 - Creative Problem Solving (3.0 cr)
- MKTG 3001 - Principles of Marketing (3.0 cr)
- CI 1871 - Computer Literacy and Problem Solving (4.0 cr)
- DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
- or DES 1101V - Honors: Introduction to Design Thinking [AH, WI] (4.0 cr)
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- or SOC 3811 - Social Statistics [MATH] (4.0 cr)
- or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or STAT 3022 - Data Analysis (4.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)
- or ENGL 3027W - The Essay [WI] (4.0 cr)
- MGMT 3001 - Fundamentals of Management (3.0 cr)
- MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
- or CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
- or MATH 1051 - Pre calculus I [MATH] (3.0 cr)
- or MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
Required Retail Merchandising Core
- RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
- RM 2215 - Introduction to Retail Merchandising (3.0 cr)
- RM 3124 - Consumers of Design (3.0 cr)
- RM 3201 - Career and Internship Preparation for Retail Merchandising (1.0 cr)
- RM 3242 - Retail Buying (3.0 cr)
- RM 4117W - Retail Environments and Human Behavior [WI] (3.0 cr)
- RM 4196 - Internship in Retail Merchandising (1.0 - 2.0 cr)
- RM 4217 - International Retail Markets [GP] (3.0 cr)
- RM 4248 - Creative Leadership in Retailing (3.0 cr)

Retail Merchandising Electives
Complete a minimum of 18 credits from the list.
Take 18 or more credit(s) from the following:
- ADES 2213 - Textile Analysis (4.0 cr)
- ADES 2214 - Softlines Analysis (3.0 cr)
- ADES 3217 - Fashion: Trends and Communication (3.0 cr)
- ADES 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
- ADES 4215 - Product Development: Softlines (4.0 cr)
- ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
- DES 2101 - Design and Visual Presentation (2.0 cr)
- PDES 2701 - Creative Design Methods (3.0 cr)
- RM 2234 - Retailing in a Digital Age [TS] (3.0 cr)
- RM 3196 - Field Study: National or International (1.0 - 4.0 cr)
- RM 3243 - Visual Merchandising (3.0 cr)
- RM 4123 - Living in a Consumer Society (3.0 cr)
- RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)
- RM 4216 - Retail Promotions (3.0 cr)
- RM 4247 - Advanced Buying and Sourcing (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
- ENGL 3027W - The Essay [WI] (4.0 cr)
- RM 4117W - Retail Environments and Human Behavior [WI] (3.0 cr)
- RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Retail Merchandising Minor
DHA Retail Merchandising
College of Design

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2020
- Required credits in this minor: 15 to 17

Minors in retail merchandising are introduced to basic retail merchandising principles. The minor provides the opportunity to explore several facets of the retail industry, including retail buying, visual merchandising, and retail promotions. Outstanding opportunities are provided to students who meet minor requirements, including travel to domestic and international retail centers.

Program Delivery
This program is available:
- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Minor Courses
RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
RM 2215 - Introduction to Retail Merchandising (3.0 cr)
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
  - RM 2234 - Retailing in a Digital Age [TS] (3.0 cr)
  - RM 3196 - Field Study: National or International (1.0 - 4.0 cr)
  - RM 3242 - Retail Buying (3.0 cr)
  - RM 3243 - Visual Merchandising (3.0 cr)
  - RM 4123 - Living in a Consumer Society (3.0 cr)
  - RM 3124 - Consumers of Design (3.0 cr)
  - RM 4216 - Retail Promotions (3.0 cr)
  - RM 4217 - International Retail Markets [GP] (3.0 cr)
  - RM 4247 - Advanced Buying and Sourcing (3.0 cr)
  - RM 4248 - Creative Leadership in Retailing (3.0 cr)
**Twin Cities Campus**

**Election Administration Undergraduate Certificate**

*HHH Politics and Governance Academic Program*

Hubert H. Humphrey School of Public Affairs

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 12
- N/A

The undergraduate certificate in election administration prepares professional election officials across the country for advancement in the field as well as undergraduate students interested in entering the field of election administration. Students will acquire and develop the skills and knowledge of election operations and procedures. All courses are offered in an online format and include topics such as election law, election security, data analysis, and voter participation.

**Program Delivery**

This program is available:
- completely online (all program coursework can be completed online)

**Admission Requirements**

The ideal candidate for the undergraduate certificate in election administration program will have 45 college credits or a minimum of 1 year of work experience in election administration or a related field. A complete application will include:

- Application form
- College transcripts (if applicable)
- Resume (including statement of election administration experience or related field if applicable)
- Personal Statement
- A valid TOEFL or IELTS exam, with a minimum score of 100 (TOEFL) or 7.0 (IELTS) for international students.

For information about University of Minnesota admission requirements, visit the [Office of Admissions website](#).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

Maintain a minimum of 2.8 GPA to remain in good standing in the program. All courses must be taken A-F unless only offered S-N.

**Required Courses**

- PA 3969 - Survey of Election Administration (3.0 cr)
- PA 3972 - Elections and the Law (2.0 cr)
- PA 3973 - Strategic Management of Election Administration (2.0 cr)

**Elective Courses**

Take 5 or more credit(s) from the following:

- PA 3975 - Election Design (2.0 cr)
- PA 3976 - Voter Participation (1.0 cr)
- PA 3982 - Data Analysis for Election Administration (2.0 cr)
- PA 3983 - Introduction to Election Security (1.0 cr)
- PA 3984 - Elections Security: How to Protect America’s Elections (2.0 cr)
Twin Cities Campus

Mortuary Science B.S.

Medical School - Adm

Medical School

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2020
• Required credits to graduate with this degree: 120
• Required credits within the major: 70
• This program requires summer terms.
• N/A
• Degree: Bachelor of Science

The program of mortuary science at the University of Minnesota, established in 1908, was the first program of its kind to be organized at a state university.

For detailed information, please visit the program's website (www.med.umn.edu/mortuaryscience), or contact the program office via email mortsci@umn.edu or phone 612-624-6464.

ACCREDITATION:
The Mortuary Science degree program at the University of Minnesota is accredited by the American Board of Funeral Service Education (ABFSE), 992 Mantua Pike, Suite 108, Woodbury Heights, New Jersey 08097 (816) 233-3747. Web: www.abfse.org.

National Board Examination pass rates, graduation rates, and employment rates for this and other ABFSE- accredited programs are available at www.abfse.org in the Directory of Accredited Programs.

OUR MISSION:
Funeral directors are health care professionals who serve others during a time of loss, pain, and grief. The Program of Mortuary Science’s mission is to skillfully combine the study of behavioral, physical, and applied sciences for the goal of preparing graduates for careers as knowledgeable, skilled, and innovative funeral service professionals. Program graduates will be prepared to serve bereaved members of their communities in a manner that is proficient, dignified, and caring.

PROGRAM LEARNING OUTCOMES:
The central objective of an ABFSE-accredited program must be to educate students in every phase of funeral service so that program graduates are prepared for entry-level employment in funeral service.

Upon completion of an accredited program, students will be able to:

- Explain the importance of funeral service professionals in developing relationships with the families and communities they serve.
- Identify standards of ethical conduct in funeral service practice.
- Interpret how federal, state, and local laws apply to funeral service in order to ensure compliance.
- Apply principles of public health and safety in the handling and preparation of human remains.
- Demonstrate technical skills in embalming and restorative art that are necessary for the preparation and handling of human remains.
- Demonstrate skills required for conducting arrangement conferences, visitations, services, and ceremonies.
- Describe the requirements and procedures for burial, cremation, and other accepted forms of final disposition of human remains.
- Explain management skills associated with operating a funeral establishment.
- Demonstrate verbal and written communication skills and research skills needed for funeral service practice.

Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Admission Requirements
Students must complete 26 credits before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Applicants must provide the program with two letters of recommendation and a professional statement as part of the application process. Criteria for the letters of recommendation and professional statement are found on the program’s Web site: www.med.umn.edu/mortuaryscience.

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Information current as of September 02, 2020
Upon admission, students are required to submit proof of certain immunizations, vaccinations, and health insurance per Academic Health Sciences policy, https://healthsciedu.umn.edu/policies.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**Required prerequisites**

**Prerequisite Courses**
The following courses, or equivalent courses as approved by the program, are prerequisites for program courses. Equivalent course substitutions may be approved by the program. Contact the program office for more information mortsci@umn.edu or 612-624-6464.

**ACCT 2050 - Introduction to Financial Reporting (4.0 cr)**
**PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)**
**SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)**
**COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)**
- or COMM 3401 - Introduction to Communication Theory (3.0 cr)
- or COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- or COMM 3441 - Introduction to Organizational Communication (3.0 cr)
- or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)

**General Requirements**
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**
Prior to being cleared for graduation, all students are required to: 1) attend a National Board Examination information review session, 2) take the practice National Board Examination (PNBE), and 3) write an analysis paper on their PNBE results. Students PNBE scores and paper must be submitted by the last day of the academic term in which they plan to graduate.

**Foundations**
- **MORT 3014 - Funeral Service Rules and Regulations (2.0 cr)**
- **MORT 3018 - Funeral Service Practice I (3.0 cr)**
- **MORT 3019 - Funeral Service Practice II (3.0 cr)**
- **MORT 3025 - Business Law (3.0 cr)**
- **MORT 3031 - Funeral Service Law (2.0 cr)**
- **PHAR 1002 - Medical Terminology (2.0 cr)**

**Sciences**
- **MORT 2171 - Introductory Anatomy (3.0 cr)**
- **MORT 3048 - Microbiology and Pathology for Funeral Service (4.0 cr)**
- **MORT 3051 - Restorative Art (2.0 cr)**
- **MORT 3061 - Embalming Theory (3.0 cr)**
- **MORT 3065 - Embalming Chemistry (2.0 cr)**
- **MORT 3151 - Restorative Art Laboratory (1.0 cr)**
- **MORT 3161 - Embalming Laboratory (1.0 cr)**
- **MORT 3171 - Human Anatomy Laboratory (2.0 cr)**

**Theory**
- **MORT 3012W - Organization and Management of Funeral Business [WI] (3.0 cr)**
- **MORT 3016 - Funeral Service Marketing and Merchandising (3.0 cr)**
- **MORT 3021W - Funeral Service Psychology and Arrangements Theory [WI] (3.0 cr)**
- **MORT 3022W - Funeral Service Arrangements Laboratory [WI] (4.0 cr)**
- **MORT 3371 - Death, Dying and Bereavement Across Cultures and Religions (3.0 cr)**

**Clinical Rotation**
Students are required to complete two clinical rotations totaling a minimum of 6 credits and no more than 12 credits. One rotation must be completed during May session. The other may be completed in the fall, spring, or summer term.

**MORT 3379 - Clinical Funeral Service Rotation (1.0 - 6.0 cr)**

**Upper Division Writing Intensive within the Major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied...
within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:

- MORT 3012W - Organization and Management of Funeral Business [WI] (3.0 cr)
- MORT 3021W - Funeral Service Psychology and Arrangements Theory [WI] (3.0 cr)
- MORT 3022W - Funeral Service Arrangements Laboratory [WI] (4.0 cr)
**Twin Cities Campus**

**Nursing B.S.N.**

**School of Nursing**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 120
- Required credits within the major: 99 to 102
- University of Minnesota Rochester
- Degree: Bachelor of Science in Nursing

The four-year BSN program consists of one year of prerequisite courses and a three-year nursing sequence. Students are admitted to the three-year sequence after completing the prerequisites. Admission is once a year for the upcoming fall semester. The program has a full-time, primarily day school curriculum.

The program prepares students to be professional nurses who think critically and analytically as they encounter today's complex health care issues and a wide variety of client needs. Graduates are eligible to take the registered nurse (RN) licensure examination and be certified as public health nurses. The School of Nursing is accredited by the Commission on Collegiate Nursing Education (CCNE).

The School of Nursing at the University of Minnesota is improving nursing care through nursing education, research, and community service. The school is proud to offer students opportunities to learn from internationally renowned faculty who emphasize inquiry, critical thinking and analysis, clinical excellence, and leadership. Throughout their education, undergraduate and graduate students have the opportunity to collaborate with faculty on research projects as well as serve the vibrant communities that surround them. Nursing courses at both the Twin Cities and Rochester locations include advanced use of the Internet, interactive television, and other technology-enhanced delivery methods.

As a part of one of the nation's most extensive interdisciplinary academic health centers, the University of Minnesota's School of Nursing is located in the heart of two of the most progressive health care communities. The school prepares nurses to the best of its ability by providing them with the technical and human-interaction skills necessary to integrate cutting-edge research into practice.

**Program Delivery**

This program is available:
- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

Students must complete 6 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
- 3.00 already admitted to the degree-granting college
- 3.00 transferring from another University of Minnesota college
- 3.00 transferring from outside the University

Send an application for BSN to School of Nursing.

A minimum of 5 of the required prerequisite courses must be taken using the A-F grading basis.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**Required prerequisites**

**Nursing BSN Prerequisites**

Students on the Rochester campus will take between 25 to 27 credits. Students on the Twin Cities campus will take between 21 to 23 credits.

Take 21 - 27 credit(s) from the following:

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1015</td>
<td>Introductory Chemistry: Lecture [PHYS]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or CHEM 1061</td>
<td>Chemical Principles I [PHYS]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td></td>
<td>CHEM 1065 - Chemical Principles I Laboratory [PHYS]</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>PSY 1001</td>
<td>Introduction to Psychology [SOCS]</td>
<td>4.0 cr</td>
</tr>
</tbody>
</table>

**Rochester only**

BIOL 2331 must be taken A-F.
• BIOL 2331 - Anatomy and Physiology I (4.0 cr)

**Spring**

BIO1 1009 - General Biology [BIOL] (4.0 cr)
- or BIO1 1012 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
FSON 1112 - Principles of Nutrition [TS] (3.0 cr)
FSOS 1201 - Human Development in Families: Lifespan [SOCs, DSJ] (4.0 cr)
- or NURS 2001 - Human Growth and Development: A Life Span Approach (3.0 cr)
- or Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
  - NURS 3690 (Inactive) (2.0 cr)
  - NURS 3691 (Inactive) (1.0 cr)

**First-year writing**

Any course that fulfills the University first-year writing requirement will fulfill this requirement.
- WRIT 1301 - University Writing (4.0 cr)
- or WRIT 1401 - Writing and Academic Inquiry (4.0 cr)

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

**Program Requirements**

**Year 1**

Students on the Rochester campus will take 10 courses for 26 credits. Students on the Twin Cities campus will take 11 courses for 30 credits.

Take 10 - 11 course(s) totaling 26 - 30 credit(s) from the following:

**Fall**

- NURS 3703 - Assessment and Beginning Interventions: Nursing Lab 1 (2.0 cr)
- NURS 5010 - Foundations of Interprofessional Communication and Collaboration (1.0 cr)
- NURS 3806 - Nurse as Professional (2.0 cr)
  - or NURS 3806H (Inactive) (3.0 cr)

- **Anatomy and Physiology**
  - Twin Cities
    - Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:
      - **Anatomy**
        - ANAT 3001 - Human Anatomy (3.0 cr)
        - or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
        - or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
      - **Human Physiology**
        - PHSL 3051 - Human Physiology (4.0 cr)
  - or Rochester
    - Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
      - BIOL 3332 - Anatomy and Physiology II (4.0 cr)

- **Spring**

- NURS 3705 - Nursing Interventions (2.0 cr)
- NURS 3803 - Application of Genetics in Nursing (2.0 cr)
- PHAR 3800 - Pharmacotherapy for the Health Professions (3.0 cr)

- **Microbiology**
  - Twin Cities
    - MICB 3301 - Biology of Microorganisms (5.0 cr)
    - or VBS 2032 - General Microbiology With Laboratory (5.0 cr)
  - or Rochester
    - BIOL 3344 - Microbiology (4.0 cr)

- **Fall or Spring**

  The semester in which these courses are taken may vary from year to year.
  - NURS 3801 - Patient Centered Care of Adults and Older Adults I (3.0 cr)
  - NURS 3802 - Patient Centered Care: Nursing Care of Families I (3.0 cr)
  - or NURS 3802H - Nursing Care of Families I Honors (4.0 cr)

**Year 2**

Take exactly 10 course(s) totaling exactly 28 credit(s) from the following:

**Fall**
•NURS 4104 - Ethical Sensitivity and Reasoning in Health Care [CIV] (2.0 cr)
NURS 4106 - Nurse as Collaborator (1.0 cr)

It is strongly recommended that students take NURS 3710 to fulfill this requirement.

NURS 3710 - Statistics for Clinical Practice and Research [MATH] (3.0 cr)
or
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or
PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or
SOC 3811 - Social Statistics [MATH] (4.0 cr)
or
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or
STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or
STAT 4101 - Theory of Statistics I (4.0 cr)

•Spring
NURS 4205W - Nursing Theory and Research [WI] (3.0 cr)
or
NURS 4205V - Honors: Nursing Theory and Research [WI] (3.0 cr)

•Fall or Spring
The semester in which these courses are taken may vary from year to year.

•NURS 3115 - Health Informatics and Information Technology [TS] (3.0 cr)
NURS 4301 - Person Centered Care of Adults and Older Adults II (4.0 cr)
NURS 4303 - Practicum: Person Centered Care of Adults in Acute Care (3.0 cr)
NURS 4305 - Practicum: Community-based Care of Families Across Life Span (3.0 cr)
NURS 4312 - Patient Centered Care: Nursing Care of Families II (4.0 cr)
NURS 4321 - Public Health Nursing (2.0 cr)

Year 3
Take exactly 8 course(s) totaling exactly 20 credit(s) from the following:

Fall
Note: NURS 4701 will be worth 3 credits by Fall 2020.
•NURS 4402 - Taking Ethical Action in Health Care [CIV] (1.0 cr)
NURS 4703 - Specialty Focused Practicum I (2.0 cr)
NURS 4704 - Continuum of Care Practicum (2.0 cr)
NURS 4706 - Transition to Practice (1.0 cr)
NURS 4777W - Senior Project in the Nursing Major [WI] (3.0 cr)
or
NURS 4404V - Honors: Applied Research and Research Utilization [WI] (3.0 cr)

Take exactly 3 credit(s) from the following:
•NURS 4701 - Advanced Nursing Across the Lifespan (2.0 - 3.0 cr)

•Spring
•NURS 4705 - Specialty Focused Practicum II (6.0 cr)
NURS 4707 - Nursing Leadership: Professional Practice in Complex Systems (2.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.

Take 0 - 1 course(s) from the following:
•NURS 4205W - Nursing Theory and Research [WI] (3.0 cr)
or
NURS 4205V - Honors: Nursing Theory and Research [WI] (3.0 cr)
•NURS 4777W - Senior Project in the Nursing Major [WI] (3.0 cr)
or
NURS 4404V - Honors: Applied Research and Research Utilization [WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.

Rochester
The nursing major is available at two campus locations, the University of Minnesota, Twin Cities and the University of Minnesota, Rochester. Policies, application materials, and course content are the same at both campuses.

Please note that at the Rochester campus admission prerequisites differ slightly due to course availability at the University of Minnesota, Rochester (UMR). Students admitted to the Rochester location may have a slightly different course sequence, but the timeline is the same at both the Twin Cities and Rochester locations. Contact the School of Nursing for specific information.
Medical Laboratory Sciences Certificate

Allied-Medical Technology

Academic Health Center Shared

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2020
- Required credits to graduate with this degree: 38
- This program requires summer terms.
- Degree: Medical Laboratory Science Certificate

The medical laboratory sciences certificate program consists of 2-3 semesters of professional program courses and 1 semester of clinical practicum. Students from academic affiliate schools or those who already have a baccalaureate degree can apply for admission directly into the final professional year after completion of the prerequisites and the upper division science requirements. Admission is on a rolling basis for the upcoming fall semester. The program has a full-time hybrid delivery (more than 50% online delivery) through online modules, interactive television, and other technology-enhanced delivery methods.

The MLS program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The program prepares students to be professional laboratory practitioners who are not only able to perform medical laboratory testing but analyze and critique the accuracy and validity of testing results for the improvement of patient care or research design. Graduates are eligible to take the American Society for Clinical Pathology Board of Certification examination and be certified as medical laboratory scientists. In addition to the medical laboratory setting, graduates of this program are qualified to work in a variety of other laboratory facilities such as research, environmental, biomedical, public health, or forensic laboratories.

With the curriculum emphasis on developing quality understanding of laboratory methods and their diagnostic interpretation, our graduates are also excellent candidates for graduate research degree programs or graduate medical professional schools. Graduates of the MLS Program are also prepared to be leaders in healthcare delivery, medical laboratory professional societies, or as members of a research and development team. Since it began in 1922 as the first educational program for medical laboratory personnel, the MLS Program at the University of Minnesota has been a leader in the profession. Faculty in the program published the first article on quality control in the clinical laboratory, developed the first medical laboratory technician program, and established the first master's degree in clinical laboratory sciences. The program is proud to provide students with the opportunity to learn from faculty who focus on clinical excellence, critical thinking, analysis, evaluation, scientific inquiry, leadership, and professional and community service. Current faculty perform laboratory-based research as well as scholarship in the field of teaching and learning. Many faculty also hold national and state offices in professional organizations, including the American Society for Clinical Laboratory Science (ASCLS) and the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). As a part of one of the nation's most extensive interdisciplinary academic health centers, the University of Minnesota's MLS program provides opportunities for interaction with students from other health professions as you prepare for a progressive career in laboratory medicine.

**Program Delivery**

This program is available:
- partially online (between 50% to 80% of instruction is online)

**Admission Requirements**

Students must complete 10 courses before admission to the program.

A GPA above 2.0 is preferred for the following:
- 2.75 already admitted to the degree-granting college
- 2.75 transferring from another University of Minnesota college
- 2.75 transferring from outside the University

Minimum prerequisite science GPA of 2.75 and comply with the Technical Standards (Essential Functions) requirements of the program. Pre-admission interview and skills test. Admitted students are required to pass a criminal background check and submit proof of immunizations required for U of MN Academic Health Center students.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**Required prerequisites**

**Preparatory Courses**

Students should take:
- MLSP 5011W - Professional Issues in the Health Care Community [WI] (2.0 cr)
- MLSP 5311 - Fundamental Biomedical Laboratory Techniques (4.0 cr)
MLSP 5511 - Principles of Immunobiology (3.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)

Math
  MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)

Statistics
  STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)

Chemistry and Physiology
  CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  CHEM 2301 - Organic Chemistry I (3.0 cr)
  CHEM 2302 - Organic Chemistry II (3.0 cr)
  PHSL 3051 - Human Physiology (4.0 cr)

Biology
  BIOL 1009 - General Biology [BIOL] (4.0 cr)
  GCD 3022 - Genetics (3.0 cr)
or BIOL 4003 - Genetics (3.0 cr)
  MICB 3301 - Biology of Microorganisms (5.0 cr)
or VBS 2032 - General Microbiology With Laboratory (5.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements
In accordance with Minnesota law, a criminal background check is required of each student before clinical courses. The program arranges this background check.

Year 1 Fall and Spring Certificate Courses
Students should take:
  MLSP 5012 - Foundations in Interprofessional Communication and Collaboration (1.0 cr)
  MLSP 5013 - Scholarly Inquiry and Analysis in Medical Laboratory Sciences (1.0 cr)
  MLSP 5111 - Concepts of Diagnostic Microbiology (3.0 cr)
  MLSP 5112 - Application of Diagnostic Microbiology Principles (2.0 cr)
  MLSP 5211 - Fundamentals in Hematology and Hemostasis (3.0 cr)
  MLSP 5212 - Application of Hematology & Hemostasis Principles (1.0 cr)
  MLSP 5312 - Body Fluid Analysis (2.0 cr)
  MLSP 5113 - Advanced Concepts in Diagnostic Microbiology (3.0 cr)
  MLSP 5213 - Diagnostic Hematology (3.0 cr)
  MLSP 5214 - Advanced Hematology Morphology (1.0 cr)
  MLSP 5313 - Chemical Analysis in Health and Disease (3.0 cr)
  MLSP 5513 - Transfusion Medicine Principles and Methods (3.0 cr)
  MLSP 5514 - Application of Transfusion Medicine Principles (2.0 cr)

Clinical Courses
These courses should be completed during the clinical rotations in the summer and fall terms following the senior year, including clinical chemistry, hematology and coagulation, transfusion medicine, and microbiology. Students should take:
  MLSP 5014W - Laboratory Operations and Management in Health Care Systems [WI] (2.0 cr)
  MLSP 5701 - Clinical Experience in Microbiology (2.0 cr)
  MLSP 5702 - Clinical Experience in Hematology and Hemostasis (2.0 cr)
  MLSP 5703 - Clinical Experience in Clinical Chemistry and Urinalysis (2.0 cr)
  MLSP 5704 - Clinical Experience in Transfusion Medicine (2.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Rochester
Existing program.
Existing program.

Minnesota State University, Mankato (Affiliate Campus)
Existing program.
Existing program.

St. Cloud State University
Existing program.
Existing program.

University of Wisconsin - River Falls
Existing program.
Existing program.