This file serves as an official record of University, college, and program requirements and policies during a specific time period. It includes a directory of undergraduate programs, majors, and course descriptions. It also includes a list of University policies.

NOTE: The information in this catalog is subject to change without notice. Colleges and departments make changes in their degree requirements and course descriptions frequently. For the most current information, check with department offices, advisers, and visit the Online Catalog at www.catalogs.umn.edu.

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### University of Minnesota Twin Cities Undergraduate Programs 2018-2020

*Indicates a free-standing minor

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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 2018
• Required credits in this minor: 15 to 18
• 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 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 1961H - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
or 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 3811 - Introduction to Animal Behavior (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 4009W - Warfare and Human Evolution [WI] (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)
- EEB 5322 - Evolution and Animal Cognition (3.0 cr)
- EEB 5327 - Behavioral Ecology (3.0 cr)
- ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- NSCI 3100 - 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 [SOCS, WI] (3.0 cr)
  or ANTH 5015W - Biology, Evolution, and Cultural Development of Language [SOCS, 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 - 6.0 cr)
- BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOC 4994 - Directed Research (1.0 - 6.0 cr)
- BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
- BIOL 4993 - Directed Studies (1.0 - 6.0 cr)
- BIOL 4994 - Directed Research (1.0 - 6.0 cr)
- EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4794W - Direct Research: Writing Intensive [WI] (1.0 - 6.0 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 - 6.0 cr)
- GCD 4993 - Directed Studies (1.0 - 7.0 cr)
- GCD 4994 - Directed Research (1.0 - 6.0 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 - 6.0 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 - 6.0 cr)
- PMB 4993 - Directed Studies (1.0 - 7.0 cr)
- PMB 4994 - Directed Research (1.0 - 6.0 cr)
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

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 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961H - 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)
or BIOL 3004H - 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 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 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 - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)

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)
or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOC 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)
  or CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)

Upper Division Biochemistry Electives
BIOC 4351 - Protein Engineering (3.0 cr)
  or BIOC 5213 - Selected Topics in Molecular Biology (3.0 cr)
  or BIOC 5216 - Current Topics in Signal Transduction (3.0 cr)
  or BIOC 5309 - Biocatalysis and Biodegradation (3.0 cr)
  or BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
  or BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
  or BIOC 5528 - Spectroscopy and Kinetics (4.0 cr)
  or BIOC 5535 - Introduction to Modern Structural Biology -- Diffraction (2.0 cr)
  BIOC 5536 - Introduction to Modern Structural Biology - Nuclear Magnetic Resonance (2.0 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 4235 - 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.
  Take 2 or more credit(s) from the following:
  - BIOC 4994 - Directed Research (1.0 - 6.0 cr)
  - BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
  - BIOL 4994 - Directed Research (1.0 - 6.0 cr)
  - BIOC 5002 - Critical Evaluation of Biochemistry Research (1.0 cr)
  - BIOC 5444 - Muscle (3.0 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 (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 (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)
• NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 5300 - Biological Microscopy & Digital Imaging (3.0 cr)
• PM 4111 - Microbial Physiology and Diversity (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (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:

• BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3412W - 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 - 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)
• GCD 4005W - Cell Biology: Writing Intensive [WI] (3.0 cr)
• GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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)
• 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 - 6.0 cr)
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 2018
- Required credits in this minor: 27 to 33

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)
  or BIOL 1961H - 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 27 to 33 total required credits.

**Minor Courses**
- **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)
Twin Cities Campus

Biology B.S.

College of Biological Sciences - Adm

Requirements for this program are current for Fall 2018

- Required credits to graduate with this degree: 120
- Required credits within the major: 69 to 78
- 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: biochemistry, microbiology, plant biology, and behavioral 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

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 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961H - 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 2004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
- BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 2004H - 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 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 Organic Chemistry I (3.0 cr)

Physics

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 1501V - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
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)
or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3020 - 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)

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)
- MICH 3301 - Biology of Microorganisms (5.0 cr)
- PMB 3002 - Plant Biology: Function (2.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
or 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 3811 - Introduction to Animal Behavior (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 11 or more credit(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 - 6.0 cr)
• BIOC 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)
• EEB 3807 - Ecology (4.0 cr)
• EEB 3811 - Introduction to Animal Behavior (4.0 cr)
• BIOL 4596 - Coral Reef Ecology (Dive Trip) (2.0 cr)
• BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
• BIOL 4994 - Directed Research (1.0 - 6.0 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)
• 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 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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 5405 - 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 - 6.0 cr)
• PMB 4994 - Directed Research (1.0 - 6.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 2005 - Animal Diversity Laboratory (2.0 cr)

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Information current as of August 24, 2018
• EEB 3409 - Evolution (3.0 cr)
  or EEB 5409 - Evolution (3.0 cr)

• Additional Electives
  Take 0 - 8 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 - 6.0 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 - 6.0 cr)
  • BIOC 5002 - Critical Evaluation of Biochemistry Research (1.0 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)
  • BIOL 3209 - 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 4590 - Coral Reef Ecology (2.0 cr)
  • BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
  • BIOL 4794W - Directed Research [WI] (1.0 - 6.0 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 - 6.0 cr)
  • BIOL 4994 - Directed Research (1.0 - 6.0 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)
  • BMEN 2501 - Cellular and Molecular Biology for Biomedical Engineers [BIOL] (4.0 cr)
  • CHEM 2302 - Organic Chemistry II (3.0 cr)
  • CHEM 2311 - Organic Lab (4.0 cr)
  • CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products (4.0 cr)
  • CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
  • CSCI 3081W - Program Design and Development [WI] (4.0 cr)
  • CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (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 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 3807 - Ecology (4.0 cr)
  • EEB 3811 - Introduction to Animal Behavior (4.0 cr)
  • EEB 4068 - Plant Physiological Ecology (3.0 cr)
  • EEB 4129 - Mammalogy (4.0 cr)
• NSCI 4150 - Advanced Topics in Neuroscience (3.0 cr)
• NSCI 4167 - Neuroscience in the Community (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)
• NSCI 5300 - Biological Microscopy & Digital Imaging (3.0 cr)
• PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
• PHYS 3022 - Introduction to Cosmology (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 3500 - Special Topics in Plant Biology (1.0 - 3.0 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 - 6.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 6.0 cr)
• PMB 5109 - Current Questions in Fungal Biology (2.0 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)
• 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)
• PVM 4131 - Immunology (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
o r MICB 3303 - Biology of Microorganisms (3.0 cr)
• EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
o r PHSL 5444 - Muscle (3.0 cr)
• PMB 4412 - Plant Physiology (3.0 cr)
o r PMB 5412 - Plant Physiology (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 - 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)
• BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 4312W - 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 - 6.0 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 - 6.0 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 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 - 6.0 cr)
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 2018
• 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.

Non-CBS students may pursue minors in both pharmacology and biology.

Additionally, students completing a minor in any of the CBS undergraduate departments cannot also pursue a Biology minor.

Students interested in declaring a biology minor can do so online at the College of Biological Sciences website.

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. Up to 3 credits from a transfer institution (including those taken abroad) may be applied toward the 12 elective credits. In order to count for the biology minor, transfer courses must be evaluated by a faculty member for both biology content and the level at which they were taught.

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
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)

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)
or BIOL 1961H - 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, 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 - 6.0 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 - 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)
  • BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (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)
  • EEB 3807 - Ecology (4.0 cr)
  • EEB 3811 - Introduction to Animal Behavior (4.0 cr)
  • BIOL 3960H - Communicating in the Biological Sciences (1.0 cr)
  • PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
  • BIOL 4201 - Teaching in the Biology Laboratory (1.0 cr)
  • BIOL 4596 - Coral Reef Ecology (Dive Trip) (2.0 cr)
  • BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
  • BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
  • BIOC 4993 - Directed Studies (1.0 - 6.0 cr)
  • BIOC 4994 - Directed Research (1.0 - 6.0 cr)
  • BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
  • BIOL 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 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
  • EE 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
  • EEB 4068 - Plant Physiological Ecology (3.0 cr)
  • EEB 4129 - Mammalogy (4.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4994 - Directed Research (1.0 - 6.0 cr)
• PMB 5109 - Current Questions in Fungal Biology (2.0 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 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
  or BIOL 3004H - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 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
Cellular and Organismal Physiology B.S.
College of Biological Sciences - Adm
College of Biological Sciences

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 82 to 89
• 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

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 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961H - 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 Laboratory (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 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 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 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)
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 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or PHYS 1401H - Honors Physics I [PHYS, WI] (4.0 cr)
  or PHYS 1501V - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
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)
  or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (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)

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 3811 - Introduction to Animal Behavior (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 9 elective credits are required. At least 1 elective course must include a laboratory or field component. At least 6 credits must come from the Physiology Major Electives list. The remaining credits can come from either the Physiology Major Electives or the Other Electives list.
Take 9 or more credit(s) from the following:

Lab/Field Electives
At least 1 elective course must include a laboratory or field component. Directed research must be taken for at least 3 credits to 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 - 6.0 cr)
- BIOC 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)
- BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
- BIOL 4994 - Directed Research (1.0 - 6.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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 - 6.0 cr)
- GCD 4994 - Directed Research (1.0 - 7.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Physiology and Diversity (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 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- PMB 4994 - Directed Research (1.0 - 6.0 cr)

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:
- BIOC 5444 - Muscle (3.0 cr)
- BIOL 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 4129 - Mammalogy (4.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- FNRM 3104 - Forest Ecology (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 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 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 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 3811 - Introduction to Animal Behavior (4.0 cr)
• Take 0 - 6 credit(s) from the following:
  • BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
  • BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
  • EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
  • EEB 4993 - Directed Studies (1.0 - 6.0 cr)
  • GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
  • GCD 4993 - Directed Studies (1.0 - 7.0 cr)
• MICB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• MICB 4993 - Directed Studies (1.0 - 7.0 cr)
• NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
• PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PMB 4993 - Directed Studies (1.0 - 7.0 cr)
• Other Elective Options
  Take 0 - 1 course(s) from the following:
  • BIOL 4xxx
  • BIOL 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
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• STAT 3021 - Introduction to Probability and Statistics (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 - 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)
- **Biol 4321W** - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
- **BIOL 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- **BIOL 4794W** - Directed Research [WI] (1.0 - 6.0 cr)
- **EEB 3408W** - Ecology [WI] (4.0 cr)
- **EEB 3412W** - 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 - 6.0 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 - 6.0 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 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 - 6.0 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 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
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)
- BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961H - 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)
or BIOL 3004H - 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 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 1085 - 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 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 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 - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
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)
  or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology
BIOL 3020 - 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)

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 3811 - Introduction to Animal Behavior (4.0 cr)

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.
Take 10 or more credit(s) from the following:

Field/Lab Experience
Take 2 or more credit(s) from the following:
• EEB 3807 - Ecology (4.0 cr)
• EEB 3811 - Introduction to Animal Behavior (4.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)

• Upper Division EEB
Take 1 or more course(s) from the following:
• 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 4068 - Plant Physiological Ecology (3.0 cr)
• EEB 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• EEB 4330W - Animal Communication [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 - 6.0 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 5322 - Evolution and Animal Cognition (3.0 cr)
• EEB 5371 - Principles of Systematics (3.0 cr)
• EEB 5601 - Limnology (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
or EEB 5609 - Ecosystem Ecology (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)
• EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
or ANTH 4329 - Primate Ecology and Social Behavior (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 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 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)
• BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
• BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 4300W - 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 - 6.0 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 - 6.0 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 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 - 6.0 cr)
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 78 to 87
- Degree: Bachelor of Science

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, zebra fish, 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

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)
- 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 1961H - 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 Laboratory (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
- or BIOL 3004H - 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 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)

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 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 - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
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)
or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 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:
• 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 3811 - Introduction to Animal Behavior (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)

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 18 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 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• GCD 4994W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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 4034 - Molecular Genetics and Genomics (3.0 cr)
• GCD 4143 - Human Genetics (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 4134 - Endocrinology (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)
• NSCI 4100 - Development of the Nervous System: Cellular and Molecular Mechanisms (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 4100 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)

• Additional Electives
Take 0 - 7 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 - 6.0 cr)
• BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
• BIOC 4994 - Directed Research (1.0 - 6.0 cr)
• BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
• BIOL 3209 - 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 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
• BIOL 4950 - Special Topics in Biology (1.0 - 4.0 cr)
• BIOL 4993 - Directed Studies (1.0 - 6.0 cr)
• BIOL 4994 - Directed Research (1.0 - 6.0 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 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 3807 - Ecology (4.0 cr)
• EEB 3811 - Introduction to Animal Behavior (4.0 cr)
• EEB 4129 - Mammalogy (4.0 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 - 6.0 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 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)
• MICB 3303 - Biology of Microorganisms (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
• MICB 4151W - Eukaryotic Microbiology [WI] (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)
• MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (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)
• MICB 4993 - Directed Studies (1.0 - 6.0 cr)
• MICB 4994 - Directed Research (1.0 - 7.0 cr)
• MICE 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 4100 - 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 (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)
• 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 4321 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PMB 4321 - Minnesota Flora (3.0 cr)
• PMB 4412 - Plant Physiology (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:

- 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 - 6.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
- PMB 3012W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 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 - 6.0 cr)
- BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
- EEB 3408W - Ecology [WI] (4.0 cr)
- EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
- EEB 4300W - 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 - 6.0 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 - 6.0 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 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 - 6.0 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 2018
- Required credits in this minor: 23 to 27

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)
  - 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)
  - or
  - BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
  - or
  - BIOL 1951H - 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)
  - or
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  - or
  - CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  - or
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  - or
  - CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  - or
  - 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.
- 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)
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)
- **EEB 4611** - Biogeochemical Processes (3.0 cr)
- **ESCI 4402** - Biogeochemical Cycles in the Ocean (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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 78 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**

**Foundational Courses**

**Nature of Life/Nature of Science and Research**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIOL 1805</td>
<td>Nature of Life: Introducing New Students to the Biological Sciences (0.5 cr)</td>
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<tr>
<td>BIOL 1806</td>
<td>Nature of Life, Part Two (0.5 cr)</td>
</tr>
<tr>
<td>BIOL 2905</td>
<td>Nature of Life, Part III (0.5 cr)</td>
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<tr>
<td>BIOL 2906</td>
<td>Nature of Life, Part IV (0.5 cr)</td>
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or

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIOL 3001</td>
<td>Nature of Science and Research (1.0 cr)</td>
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**Foundations of Biology**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIOL 1951</td>
<td>Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)</td>
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<tr>
<td>BIOL 1951H</td>
<td>Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)</td>
</tr>
<tr>
<td>BIOL 1961H</td>
<td>Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)</td>
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<tr>
<td>BIOL 2003</td>
<td>Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)</td>
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<tr>
<td>BIOL 3004</td>
<td>Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)</td>
</tr>
<tr>
<td>BIOL 3003H</td>
<td>Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)</td>
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or

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>BIOL 3004H</td>
<td>Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)</td>
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**Quantitative Requirements**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 1241</td>
<td>Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)</td>
</tr>
<tr>
<td>MATH 1271</td>
<td>Calculus I [MATH] (4.0 cr)</td>
</tr>
<tr>
<td>MATH 1571H</td>
<td>Honors Calculus I [MATH] (4.0 cr)</td>
</tr>
</tbody>
</table>

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Information current as of August 24, 2018
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 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 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 - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
- 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)
  or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology
- BIOL 3020 - 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)

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:
- BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
- BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
- PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
- PMB 4111 - Microbial Physiology and Diversity (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 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)
• CSI 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)
• GCD 5545 - Mathematical Analysis of Biological Networks (4.0 cr)
• MICE 5035 - Personal Microbiome Analysis (3.0 cr)
• NSCI 5300 - Biological Microscopy & Digital Imaging (3.0 cr)
• PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (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)
• EEB 3408W - Ecology [WI] (4.0 cr)
• EEB 3412W - Introduction to Animal Behavior [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:
• 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 - 6.0 cr)
• BIOC 5409 - Evolution (3.0 cr)
• or EEB 5409 - Evolution (3.0 cr)
• Take 0 - 1 course(s) from the following:
  • GCC 3xxx
  • GCC 5xxx
• 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 - 6.0 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 - 6.0 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 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 - 6.0 cr)
Microbiology Minor

College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 35 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)
- 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 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961H - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)
- 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)
- 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 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 3020 - Molecular Biology and Society [TS] (3.0 cr)
- BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)

or

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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 74 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

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)
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 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
BIOL 3004H - 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 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)
  or BIOL 3272 - 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 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 - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
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)
  or PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3020 - 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)

Additional Core

Take 1 or more course(s) from the following:
• EEB 3811 - Introduction to Animal Behavior (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)

Neuroscience Major-specific Requirements

NSCI 2100 - 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)

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NSCI 4100 - 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:

- NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
- NSCI 4167 - Neuroscience in the Community (1.0 - 3.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4994 - Directed Research (1.0 - 6.0 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 4134 - Endocrinology (3.0 cr)
- GCD 4151 - Molecular Biology of Cancer (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] (3.0 cr)
- NSC 8217 - Systems and Computational Neuroscience (2.0 cr)
- NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
- NSCI 3100 - Mind and Brain (3.0 cr)
- NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
- NSCI 4150 - Advanced Topics in Neuroscience (3.0 cr)
- NSCI 5300 - Biological Microscopy & Digital Imaging (3.0 cr)
- PHAR 4248 - Drugs of Abuse (2.0 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 - 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)
- BIOL 4321W - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
- BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- BIOL 4794W - Directed Research [WI] (1.0 - 6.0 cr)
- EEB 3408W - Ecology [WI] (4.0 cr)
- EEB 3412W - 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 - 6.0 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 - 6.0 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)
- 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 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 - 6.0 cr)
Twin Cities Campus

Neuroscience Minor

Neuroscience
College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 12 to 15

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
Neuroscience Minor
NSCI 1002 - Social Neuroscience: Understanding Others (3.0 cr)
or NSCI 2100 - Human Neuroanatomy [BIOL] (4.0 cr)
or NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
or NSCI 3100 - Mind and Brain (3.0 cr)

Additional Elective
Courses listed as neuroscience minor requirement options (NSCI 1002, 3001W, and 3100) 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:
- ANTH 1001 - Human Evolution [BIOL] (4.0 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 3100 - Mind and Brain (3.0 cr)
- PSY 3061 - Introduction to Biological Psychology (3.0 cr)
- SLHS 3302 - Anatomy and Physiology of the Speech and Hearing Mechanisms (3.0 cr)
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 2018
- 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.
Biol 1009 - General Biology [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)
or Biol 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
Biol 1961H - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 71 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

Foundation 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)
- or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
- BIOL 1961H - 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 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
- or BIOL 3004H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- or BIOL 2003H - 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 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 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 - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 4003 - Genetics (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)

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

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 - 6.0 cr)
- **BIOC 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)
- **Biol 4794W** - Directed Research [WI] (1.0 - 6.0 cr)
- **Biol 4994** - Directed Research (1.0 - 6.0 cr)
- **EEB 4068** - Plant Physiological Ecology (3.0 cr)
- **EEB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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 - 6.0 cr)
- **GCD 4994** - Directed Research (1.0 - 6.0 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 4321** - Minnesota Flora (3.0 cr)
- **PMB 4511** - Flowering Plant Diversity (3.0 cr)
- **PMB 4794W** - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- **PMB 4994** - Directed Research (1.0 - 6.0 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:
- **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)
- **BIOI 4004** - Cell Biology (3.0 cr)
- **BIOI 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)
- **BNM 5301** - Applied Biostatistics (3.0 cr)
- **PMB 4111** - Microbial Physiology and Diversity (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** - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- **PMB 4801** - Introduction to Fungal Biology (3.0 cr)
- **PLPA 5203** - Introduction to Fungal Biology (3.0 cr)
- **PMB 4412** - Plant Physiology (3.0 cr)
- **PMB 5412** - Plant Physiology (3.0 cr)

Or 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 - 6.0 cr)
• **BIOL 4993** - Directed Studies (1.0 - 6.0 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)
• **MICB 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• **MICB 4993** - Directed Studies (1.0 - 6.0 cr)
• **NSCI 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
• **NSCI 4993** - Directed Studies (1.0 - 7.0 cr)
• **PMB 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• **PMB 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)
- **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**
- **MICE 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 1302W** - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
- **PHYS 1402V** - Honors Physics II [PHYS, WI] (4.0 cr)
- **PHYS 1502V** - Honors Introduction to Electricity and Magnetism [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 3811** - Introduction to Animal Behavior (4.0 cr)
  or **EEB 3411** - Introduction to Animal Behavior (3.0 cr)
  or **EEB 3412W** - Introduction to Animal Behavior [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:
- **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 - 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)
- **BIOL 4321W** - Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)
- **BIOL 4793W** - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- **BIOL 4794W** - Directed Research [WI] (1.0 - 6.0 cr)
- **EEB 3408W** - Ecology [WI] (4.0 cr)
- **EEB 3412W** - 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 - 6.0 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 - 6.0 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 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 - 6.0 cr)
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 2018
- 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)
or BIOL 1961H - 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 - 6.0 cr)
- PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 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 2018
- 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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses-beyond 3-required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of courseworkincluding thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
Twin Cities Campus
Accounting Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 55 to 56
- Degree: Accounting Certificate

Accountants perform a wide range of vital financial and business services aimed at ensuring an organization runs effectively and efficiently. The interdisciplinary curriculum in this undergraduate-level certificate blends accounting principles with complementary business knowledge. Students delve into basic and advanced accounting methods such as how to record, verify, and analyze financial information, prepare budget analyses, and create financial and investment strategies.

This certificate provides an interdisciplinary blend of principles designed to give a well-rounded education in accounting, business, and management. It is designed for students who want to enhance their accounting skills, prepare for a career move, or study for an upcoming CPA or CMA exam.

This certificate will also prepare you for the following examinations:

Certified Public Accountant (CPA)
(If you plan to pursue the CPA designation in Minnesota, in addition to meeting the necessary accounting and business-related course requirements, you must have earned an undergraduate degree and completed a total of 150 semester credits of course work.)

Certified Management Accountant (CMA)

Contact the following organizations for information about exam requirements:
CPA: Minnesota Board of Accountancy
CMA: The Institute of Management Accountants

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

Admission Requirements
Students must complete 60 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.

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 21 credits of transfer coursework may be used to satisfy requirements for this certificate.

Certificate Requirements
Core Accounting Requirements
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
ACCT 3001 - Introduction to Management Accounting (3.0 cr)
Acct 5201 - Intermediate Management Accounting (2.0 cr)
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)

Accounting Electives
Choose 6 credits from the following Accounting courses.
Acct 5126 - Internal Auditing (2.0 cr)
or Acct 5160 - Financial Statement Analysis (2.0 cr)
or Acct 5180 - Consolidations and Advanced Reporting (2.0 cr)
or Acct 5236 - Introduction to Taxation of Business (2.0 cr)
or Acct 5310 - International Accounting (2.0 cr)
or Idsc 4411 - Information Technology Governance and Assurance (2.0 cr)

Core Business Related Requirements
Blaw 3058 - The Law of Contracts and Agency (4.0 cr)
Econ 1101 - Principles of Microeconomics [SoCs, Gp] (4.0 cr)
Econ 1102 - Principles of Macroeconomics (4.0 cr)
Fina 3001 - Finance Fundamentals (3.0 cr)
Idsc 3001 - Introduction to Information Technology in Business (3.0 cr)

Communication
Abus 4023W - Communicating for Results [WI] (3.0 cr)
or Mgmt 3033W - Business Communication [WI] (3.0 cr)

Business Related Electives
Choose 3 credits from the following business related courses.
Abus 3301 - Introduction to Quality Management (3.0 cr)
Mgmt 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
Hrir 3021 - Human Resource Management and Industrial Relations (3.0 cr)

Management
Mgmt 3001 - Fundamentals of Management (3.0 cr)
or Abus 4022W - Management in Organizations [WI] (3.0 cr)
Mktg 3001 - Principles of Marketing (3.0 cr)
or Abus 4701 - Introduction to Marketing (3.0 cr)

Operations
Sco 3001 - Supply Chain and Operations (3.0 cr)
or Mm 4102 - Manufacturing Operations (3.0 cr)
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 2018
• Required credits to graduate with this degree: 15
• This program requires summer terms.
• 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** - Strategic Decision Making and Problem Solving (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 **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**

- **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** - Strategic Decision Making and Problem Solving (3.0 cr)
- or **ABUS 4023W** - Communicating for Results [WI] (3.0 cr)
- or **ABUS 4041** - Dynamics of Leadership (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 4321** - Evaluating Performance Excellence in 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 4301** - Health Care Quality & Patient Safety Management (3.0 cr)
- or **HSM 4541** - Health Care Finance (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 2018
• 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)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- 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)
- 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)
- COMM 1313W - Analysis of Argument [WI] (3.0 cr)
- COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)

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

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

Major Core Courses
Student must take CMgt 4196: Construction Management Internship for a minimum of 3 credits. (Additional internships can be taken for 1-4 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 - 4.0 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 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)

Technical Electives
Student must complete a total of 6 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 SSM 4416 - Building Testing and Diagnostics (2.0 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 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 4003 - Managing in the BIM Environment (1.0 cr)
or CMGT 4193 - Directed Study (1.0 - 4.0 cr)
or CMGT 4196 - Construction Management Internship (1.0 - 4.0 cr)
or CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
or CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)

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)

Technical Electives
Student must complete a total of 9 credits selected from Construction Science and Other.

Construction Science
Student must complete at least 2 credits from this group.
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 4251 - Pavement Analysis, Design, and Rehabilitation (4.0 cr)
or CEGE 4253 - Pavement Engineering and Management (3.0 cr)
or CEGE 4501 - Hydrologic Design (4.0 cr)
or CEGE 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
or LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)

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 4003 - Managing in the BIM Environment (1.0 cr)
or CMGT 4193 - Directed Study (1.0 - 4.0 cr)
or CMGT 4196 - Construction Management Internship (1.0 - 4.0 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 Industrial Relations (3.0 cr)

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)

Technical Electives
Student must complete a total of 3 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 4003 - Managing in the BIM Environment (1.0 cr)
or CMGT 4193 - Directed Study (1.0 - 4.0 cr)
or CMGT 4196 - Construction Management Internship (1.0 - 4.0 cr)
or CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
or CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)

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 4532 - Building Envelope Design and Construction (2.0 cr)

Technical Electives
Student must complete a total of 6 credits of Technical Electives. Student should check with their adviser about courses not on this list.
BBE 3101 - Introductory Statics and Structures for Construction Management (3.0 cr)
or SSM 4416 - Building Testing and Diagnostics (2.0 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 4003 - Managing in the BIM Environment (1.0 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 - 4.0 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 LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)
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 2018
- 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 2018
- 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 2018
- 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 2018
- 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 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 81
- 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 with at least 30 credits, and some or all of the foundation courses (listed under Admission Requirements) not yet completed or in progress, will be considered for admission to premajor status. Students who have at least 45 credits and all of the foundation courses completed or in progress will be considered for admission to major status. Moving from premajor to major status requires completion of at least 45 credits as well as all of the foundation courses with a grade of C- or better.

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)

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

Core Courses
ABUS 4041 - Dynamics of Leadership (3.0 cr)
HINF 5430 - Foundations of Health Informatics I (3.0 cr)
HSM 3051 - Career Skills in a Professional Health Services Environment (2.0 cr)
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)
HSM 4596 - Health Services Management Internship (3.0 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 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
or HSM 4043 - Project and Program Management in Health Services Management (3.0 cr)
or ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)

Major Electives
Consult your advisor 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 credits from the following:
- ABUS 3510 - Communicating Virtually Across Global Teams in Applied Business Settings (4.0 cr)
- ABUS 4012 - Strategic Decision Making and Problem Solving (3.0 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>ANTH 3306W</td>
<td>Medical Anthropology [GP, WI] (3.0 cr)</td>
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<tr>
<td>ANTH 4075</td>
<td>Cultural Histories of Healing [SOCS, GP] (3.0 cr)</td>
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<td>APEC 4821W</td>
<td>Business Economics and Strategy [WI] (3.0 cr)</td>
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<td>BLAW 3058</td>
<td>The Law of Contracts and Agency (4.0 cr)</td>
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<td>CNES 3535</td>
<td>Death and the Afterlife in the Ancient World [AH] (3.0 cr)</td>
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<td>CSCL 3535W</td>
<td>The Body and the Politics of Representation [HIS, WI] (3.0 cr)</td>
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<td>Introduction to Integrative Healing (3.0 cr)</td>
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<td>CSPH 3101</td>
<td>Creating Ecosystems of Well-Being (2.0 cr)</td>
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<td>CSPH 3301</td>
<td>Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)</td>
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<td>CSPH 5000</td>
<td>Explorations in Integrative Therapies and Healing Practices (1.0 - 4.0 cr)</td>
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<td>CSPH 5111</td>
<td>Ways of Thinking about Health (2.0 cr)</td>
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<td>CSPH 5115</td>
<td>Cultural Awareness, Knowledge and Health (3.0 cr)</td>
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<tr>
<td>CSPH 5121</td>
<td>Whole Systems Healing: Health and the Environment (2.0 cr)</td>
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<tr>
<td>CSPH 5512</td>
<td>Spiritual Aspects of Palliative Care (2.0 cr)</td>
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<tr>
<td>CSPH 5521</td>
<td>Therapeutic Landscapes (3.0 cr)</td>
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<tr>
<td>CSPH 5711</td>
<td>Optimal Healing Environments (3.0 cr)</td>
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<tr>
<td>CSPH 5805</td>
<td>Wellbeing in the Workplace (3.0 cr)</td>
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<tr>
<td>ECON 3101</td>
<td>Intermediate Microeconomics (4.0 cr)</td>
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<tr>
<td>ECON 5890</td>
<td>Economics of the Health-Care System (3.0 cr)</td>
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<tr>
<td>ESPM 3011W</td>
<td>Ethics in Natural Resources [CIV, WI] (3.0 cr)</td>
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<tr>
<td>ESPM 3202W</td>
<td>Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)</td>
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<tr>
<td>FSCN 3615</td>
<td>Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)</td>
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<tr>
<td>FSCN 5601</td>
<td>Management of Eating Disorders (3.0 cr)</td>
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<tr>
<td>GCC 3007</td>
<td>Toward Conquest of Disease [ENV] (3.0 cr)</td>
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<tr>
<td>GCC 5003</td>
<td>Seeking Solutions to Global Health Issues [GP] (3.0 cr)</td>
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<tr>
<td>GEOG 3401</td>
<td>Geography of Environmental Systems and Global Change [ENV] (4.0 cr)</td>
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<tr>
<td>GEOG 3411W</td>
<td>Geography of Health and Health Care [WI] (3.0 cr)</td>
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<tr>
<td>GER 5125</td>
<td>Gerontology Service Learning (3.0 cr)</td>
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<tr>
<td>GWSS 3203W</td>
<td>Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)</td>
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<td>HINF 3431</td>
<td>Foundations of Health Informatics II (3.0 cr)</td>
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<tr>
<td>HINF 3501</td>
<td>US Health Care System: Information Challenges in Clinical Care (1.0 cr)</td>
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<tr>
<td>HINF 3502</td>
<td>Python Programming Essentials for the Health Sciences (1.0 cr)</td>
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<tr>
<td>HINF 5510</td>
<td>Applied Health Care Databases: Database Principles and Data Evaluation (3.0 cr)</td>
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<tr>
<td>HINF 5531</td>
<td>Health Data Analytics and Data Science (3.0 cr)</td>
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<td>HMED 3001W</td>
<td>Health, Disease, and Healing I [HIS, WI] (4.0 cr)</td>
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<td>HMED 3002W</td>
<td>Health Care in History II [HIS, WI] (4.0 cr)</td>
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<td>HMED 3075</td>
<td>Technology and Medicine in Modern America [HIS, TS] (3.0 cr)</td>
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<tr>
<td>HSM 4043</td>
<td>Project and Program Management in Health Services Management (3.0 cr)</td>
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<tr>
<td>HSM 4065</td>
<td>Information Privacy and Security in Health Services Management [TS] (3.0 cr)</td>
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<tr>
<td>HSM 4575</td>
<td>Innovation in Health Services (3.0 cr)</td>
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<tr>
<td>IBUS 3002</td>
<td>Managerial Accounting in Argentina and Chile (4.0 cr)</td>
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<td>IBUS 3010</td>
<td>Introduction to Global Entrepreneurship (4.0 cr)</td>
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<tr>
<td>JOUR 3757</td>
<td>Principles of Health Communication Strategy (3.0 cr)</td>
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<td>JOUR 5541</td>
<td>Mass Communication and Public Health (3.0 cr)</td>
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<td>JOUR 5543</td>
<td>Public Health Campaign Evaluation (3.0 cr)</td>
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<tr>
<td>LAW 3000</td>
<td>Introduction to American Law and Legal Reasoning (3.0 cr)</td>
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<td>LAW 3050</td>
<td>Law of Business Organizations (3.0 cr)</td>
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<td>LAW 5061</td>
<td>Financial Regulation (3.0 cr)</td>
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<tr>
<td>LAW 5062</td>
<td>Energy Law (3.0 cr)</td>
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<tr>
<td>LAW 5076</td>
<td>Essentials of Business for Lawyers (3.0 cr)</td>
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<tr>
<td>LAW 5100</td>
<td>Taxation I (3.0 cr)</td>
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<tr>
<td>LAW 5103</td>
<td>Data Privacy Law (3.0 cr)</td>
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<tr>
<td>LAW 5601</td>
<td>International Business Transactions (3.0 cr)</td>
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<tr>
<td>LAW 5608</td>
<td>Trademarks (3.0 cr)</td>
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<tr>
<td>LAW 5613</td>
<td>Copyright (3.0 cr)</td>
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<tr>
<td>LAW 5624</td>
<td>Strategic Management of Intellectual Property (3.0 cr)</td>
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<tr>
<td>LAW 5908</td>
<td>Independent Research and Writing (1.0 - 2.0 cr)</td>
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<tr>
<td>LEAD 3961</td>
<td>Leadership, You, and Your Community (3.0 cr)</td>
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<tr>
<td>LEAD 3971</td>
<td>Leadership Minor: Field Experience (3.0 cr)</td>
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<tr>
<td>LEAD 4961W</td>
<td>Leadership for Global Citizenship [GP, WI] (3.0 cr)</td>
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<tr>
<td>MGMT 3001</td>
<td>Fundamentals of Management (3.0 cr)</td>
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<tr>
<td>MGMT 3004</td>
<td>Business Strategy (3.0 cr)</td>
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<tr>
<td>MGMT 3033W</td>
<td>Business Communication [WI] (3.0 cr)</td>
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</table>
• MGMT 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
• MGMT 4000 - Social Venturing in Action (4.0 cr)
• MGMT 4002 - Managerial Psychology (4.0 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 5585 - The Healthcare Marketplace (2.0 cr)
• MILI 5589 - Medical Technology Evaluation and Market Research (2.0 cr)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• MKTG 4050 - Advertising and Promotion (4.0 cr)
• MLSP 5011W - Professional Issues in the Health Care Community [WI] (2.0 cr)
• OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
• OLPD 3318 - Introduction to Project Management (3.0 cr)
• OLPD 3330 - Global Identity: Connecting Your International Experience to Your Future (1.0 cr)
• OLPD 3336 - Religion, Ethics, and Educational Policy [CIV] (3.0 cr)
• OLPD 3640 - 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 5011 - Leading Organizational Change: Theory and Practice (3.0 cr)
• OLPD 5048 - Cross-Cultural Perspectives on Leadership (3.0 cr)
• OLPD 5080 - Special Topics: Organizational Leadership, Policy, & Development (1.0 - 3.0 cr)
• OLPD 5085 - Problems: Organizational Leadership, Policy, and Development (1.0 - 3.0 cr)
• OLPD 5233 - 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 - 4.0 cr)
• PHAR 4200W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
• PHIL 3305 - Medical Ethics (4.0 cr)
• PSY 3206 - Introduction to Health Psychology (3.0 cr)
• PUBH 3010 - Public Health Approaches to HIV/AIDS (2.0 cr)
• PUBH 3040 - Dying and Death in Contemporary Society: Implications for Intervention (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 3106 - Making Sense of Health Studies (2.0 cr)
• PUBH 3107 - Global Public Health and the Environment (2.0 cr)
• PUBH 3350 - Epidemiology: People, Places, and Disease (2.0 cr)
• PUBH 3415 - Introduction to Clinical Trials - Online (3.0 cr)
• PUBH 3639 - Prevention: Theory, Practice, and Application in Public Health Services (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 3940 - Concepts and Controversies in Public Health Nutrition and Health Promotion (1.0 cr)
• PUBH 3950 - From Kid to Community: Personal, Social and Environmental Influences on Youth Obesity (2.0 cr)
• PUBH 4410 - Summer Institute in Biostatistics (4.0 cr)
• PUBH 5635 - 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)
  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)

• Entrepreneurship
  • IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
  or 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)
  or GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)

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

• Gender and Family in the Islamic World
  • SOC 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)

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

• Information Technology in Business
  • 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)

• Population in an Interacting World
  • 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)

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

• Stuffed and Starved: The Politics of Eating
  • GLOS 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 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)
  or 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 4200W - 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)
  or GLOS 3701W - 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 2018
- 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 2018
• 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 2018
• 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 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

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

Accounting
  ACCT 2030 - Introduction to Financial Reporting (4.0 cr)
  or APEC 1251 - Principles of Accounting (3.0 cr)

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

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)

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

Statistics
  EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
  or SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (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)

Structures
If you plan to take elective CSCI courses beyond curriculum requirements, enroll in CSCI 2011.
  INET 3102 - Web Infrastructure (2.0 cr)
  or 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)
  or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  or WRIT 3001 - Introduction to Technical Writing and Communication (3.0 cr)
  or WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
  or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
  or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Core Courses
INet 4002 is the preferred version of Networking. Include CSci 4211 in your planning only if already taken.
  CSCI 4061 - Introduction to Operating Systems (4.0 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)
  or CSCI 4707 - Practice of Database Systems (3.0 cr)
  INET 4002 - Foundations of Networking (3.0 cr)
  or CSCI 4211 - Introduction to Computer Networks (3.0 cr)

Business/Communication Courses

Management
  ABUS 4022W - Management in Organizations [WI] (3.0 cr)
  or HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)

Business Communication
  ABUS 4023W - Communicating for Results [WI] (3.0 cr)

Cost Accounting
  ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
  or HSM 4541 - Health Care Finance (3.0 cr)

Quality and Process Improvement

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Information current as of August 24, 2018
ABUS 3301 - Introduction to Quality Management (3.0 cr)
or MM 4201 - Quality Engineering and Process Improvement (3.0 cr)

Business/Communication Elective(s)
Must be ABUS, IDSC, or MGMT course or other dept approved elective not included in core or technical requirements.
Take 3 or more credit(s) from the following:
• ABUS 3xxx
• ABUS 4xxx
• IDSC 3xxx
• IDSC 4xxx
• MGMT 3xxx
• MGMT 4xxx

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)
• INET 4082W - IT Infrastructure Projects and Processes [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)

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

Data Management

Required Data Management Courses
This group consists of the core course INet (or CSci) 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 - Dev Ops I: Network Programming (4.0 cr)
• INET 4032 - Systems I: Storage (4.0 cr)
• INET 4061 - Data Science I: Fundamentals (3.0 cr)
• INET 4083 - Systems II: Analysis and Design (3.0 cr)
• INET 4121 - DevOps II: Development Strategies (4.0 cr)
• INET 4165 - Security I: Principles (3.0 cr)
• INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
• INET 4193 - Directed Study (1.0 - 4.0 cr)
or INET 4596 - Internship (1.0 - 3.0 cr)
• Other technical elective with adviser approval

Data Science

Required Data Science Courses
This group consists of the core course INet (or CSci) 4707 - Introduction to Databases, and two more courses.
INET 4061 - Data Science I: Fundamentals (3.0 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 - Dev Ops I: Network Programming (4.0 cr)
• INET 4032 - Systems I: Storage (4.0 cr)
• INET 4083 - Systems II: Analysis and Design (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)  
  or INET 4596 - Internship (1.0 - 3.0 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 (or CSci 4211 if already taken) 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 (3.0 cr)  
- INET 4083 - Systems II: Analysis and Design (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 - 3.0 cr)  
• Other technical elective with adviser approval  

**Networking**

**Required Networking Courses**

This group consists of the core course INet 4002-Foundations of Networking (or CSci 4211 if already taken) 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 (3.0 cr)  
- INET 4083 - Systems II: Analysis and Design (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 - 3.0 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 (3.0 cr)  
- INET 4083 - Systems II: Analysis and Design (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 - 3.0 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 4083 - Systems II: Analysis and Design (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 (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 - 3.0 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 (3.0 cr)
• INET 4083 - Systems II: Analysis and Design (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 - 3.0 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 2018
• 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, devops (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 (3.0 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 - Dev Ops 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 4083 - Systems II: Analysis and Design (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 - 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 4051 - IT Infrastructure Operations (3.0 cr)
- or INET 4061 - Data Science I: Fundamentals (3.0 cr)
- or INET 4082W - IT Infrastructure Projects and Processes [WI] (3.0 cr)
- or INET 4083 - Systems II: Analysis and Design (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)
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 2018
• 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 4061 - Data Science I: Fundamentals (3.0 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 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 4083 - Systems II: Analysis and Design (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 (3.0 cr)
- or INET 4082W - IT Infrastructure Projects and Processes [WI] (3.0 cr)
- or INET 4083 - Systems II: Analysis and Design (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 - 3.0 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)
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 50 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.

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 2 semester(s) of any second language.

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.
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 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)

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.

Inter-College Program Career Readiness Requirement
ABUS 3051 - Career Skills in the Professional Environment for Juniors and Seniors (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 Internship (1.0 cr)
or ID 3201 - Career Planning (2.0 cr)
or ID 3208 - 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 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 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 Prog
College of Continuing and Professional Studies

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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. Health and Wellness is also a popular thematic option for students planning to complete professional school prerequisites toward careers in direct patient care.

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

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.

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.

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.

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Information current as of August 24, 2018
ICP 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)

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.

Inter-College Program Career Readiness Requirement

ABUS 3051 - Career Skills in the Professional Environment for Juniors and Seniors (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 Internship (1.0 cr)
or ID 3201 - Career Planning (2.0 cr)
or ID 3208 - 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.

-OR-

Thematic Health and Wellness Program
The thematic health and wellness program integrates coursework from several departments for students with health-related interests. Students who select this option follow the requirements for the thematic health and wellness program subplan.

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

Thematic Health and Wellness Program

Lower Division Health and Wellness Foundation Prerequisites
Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
Chemistry
Chemistry Option 1
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)

Chemistry Option 2
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)

Nutrition
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)

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

Social Science
ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
FSOS 1201 - Human Anatomy for Kinesiology Students (3.0 cr)
FSOS 1211 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)

Upper Division Health & Wellness Core Requirements
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 advisor. Must earn grade of C- or better in all courses and maintain a minimum 2.00 GPA. To be competitive for graduate and professional programs in the health sciences, GPA should be 3.00 or higher.

Anatomy
ANAT 3001 - Human Anatomy (3.0 cr)
ANAT 3601 - Principles of Human Anatomy (3.0 cr)
ANAT 3611 - Principles of Human Anatomy (3.0 cr)
KIN 3027 - Human Anatomy for Kinesiology Students (3.0 cr)

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

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

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

Health and Fitness
KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)

Nutrition
CSPH 5431 - Functional Nutrition: An Expanded View of Nutrition, Chronic Disease, and Optimal Health (2.0 cr)
FSCN 3301 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)
FSCN 3612 - Life Cycle Nutrition (3.0 cr)
FSCN 3614 - Nutrition Education and Counseling (3.0 cr)
FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
FSCN 4112 - Food Chemistry and Functional Foods (3.0 cr)
FSCN 4612 - Advanced Human Nutrition (4.0 cr)
FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
PUBH 3905 - Nutrition for Public Health Promotion and Disease Prevention (2.0 cr)

Statistics
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
NURS 3710 - Statistics for Clinical Practice and Research [MATH] (3.0 cr)
PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (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)

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

Management/Economics
Note: Some of these courses have a micro- or macroeconomics prerequisite.
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 3801 - Health Economics and Policy (3.0 cr)

Ethics
BTHX 5100 - Introduction to Clinical Ethics (3.0 cr)
or BTHX 5300 - Foundations of Bioethics (3.0 cr)
or PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
or PHIL 3305 - Medical Ethics (4.0 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)

Communication Upper Division
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 ICP 3101W - Inter-College Program Proposal Development [WI] (2.0 cr)
or KIN 5203 - Health Media, Consumerism, and Communication (2.0 cr)
or PHAR 3206 - Foundations of Health Literacy (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)

Upper Division Health and Wellness Emphases/Foci/Specialties
Complete at least 12 to 16 upper division credits in one departmental area such as addiction, business, communication, complementary medicine, life science, nutrition, public health, sexuality, social science, social work, or youth studies. Any relevant department, certificate, or minor can be considered. Courses are chosen in consultation with an advisor. Must earn grade of C- or better in all courses. Overall emphasis/focus/specialty GPA must be at least 2.00.

Upper Division Health and Wellness Supporting Coursework
To reach the 50 upper division credits required for the major, students may add courses within the emphasis or add related supporting courses. Courses are chosen in consultation with an advisor. Students must earn a grade of C- or better in all courses.

Honors UHP
This is an honors sub-plan.

Students admitted to the University Honors Program (UHP) must fulfill UHP requirements, in addition to degree program requirements. Honors courses used to fulfill degree program requirements will also fulfill UHP requirements.

Current departmental honors course offerings are listed at:
http://www.honors.umn.edu/academics/curriculum/dept_courses_current.html

Honors students complete an honors thesis project in the final year, most often in conjunction with an honors thesis course, or with an honors directed studies, or honors directed research course. Students select honors courses and plan for a thesis project in consultation with their UHP advisor and their departmental faculty advisor.
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 2018
• 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 2018
• 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.
Manufacturing operations management (MM) is the study and application of methods to improve manufacturing operations and productivity to enhance a company's competitiveness in the global arena. The curriculum combines a strong foundation in manufacturing systems and processes, supply chain/quality/project, and operations management. Graduates are prepared to work as production supervisors, materials managers, manufacturing managers, production planners, project leaders, lead technicians, order process analysts, and business analysts. The MM major is offered in close collaboration with Minnesota manufacturing professionals.

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

Chemistry
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
or CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
or CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 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
WRIT 1301 or WRIT 1401 recommended for Freshman Composition

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

Oral Communication
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or COMM 1101H - Honors: 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 COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
or WRIT 3257 - Technical and Professional Presentations (3.0 cr)

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

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 SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (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)
or PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or WRIT 3001 - Introduction to Technical Writing and Communication (3.0 cr)
or WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Major Courses
Students must complete a minimum of 3 credits of MM 4596 if MM 4501 is not taken.
MM 3001W - Manufacturing in the Global Economy [WI] (3.0 cr)
MM 3205 - Engineering for Manufacturing Operations (3.0 cr)
MM 4011 - Design of Manufacturing Systems and Simulations (3.0 cr)
MM 4012 - Manufacturing Processes and Technology (3.0 cr)
MM 4035 - Global Supply Chain Management (3.0 cr)
MM 4039 - Manufacturing Outsourcing Decisions (3.0 cr)
MM 4045 - Regulated Industry Compliance (3.0 cr)
MM 4102 - Manufacturing Operations (3.0 cr)
MM 4201 - Quality Engineering and Process Improvement (3.0 cr)
MM 4311 - Sustainable Lean Manufacturing (3.0 cr)
ABUS 4022W - Management in Organizations [WI] (3.0 cr)
ABUS 4023W - Communicating for Results [WI] (3.0 cr)
ABUS 4043 - Project Management in Practice (3.0 cr)
ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
MM 4596 - Internship (1.0 - 4.0 cr)
or MM 4501 - Capstone (3.0 cr)

Elective Courses
Other related 3xxx or 4xxx courses may be substituted with department approval.
Take 6 or more credit(s) from the following:
• ABUS 3510 - Communicating Virtually Across Global Teams in Applied Business Settings (4.0 cr)
• ABUS 4012 - Strategic Decision Making and Problem Solving (3.0 cr)
• ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
• ABUS 4041 - Dynamics of Leadership (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 4509 - New Product Development (3.0 cr)
• ABUS 4511 [Inactive] (3.0 cr)
• ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
• ABUS 4701 - Introduction to Marketing (3.0 cr)
• HSM 4541 - Health Care Finance (3.0 cr)
• HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
• MM 3305 - 3D Printing and Additive Manufacturing (3.0 cr)
• PHAR 3700 - Fundamentals of Pharmacotherapy (3.0 cr)

Upper Division Writing Intensive within the Major
Subgroup Description: 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)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• HSM 4561W - Health Care Administration and Management [WI] (3.0 cr)
• MM 3001W - Manufacturing in the Global Economy [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)
Twin Cities Campus
Manufacturing Operations Management Certificate
CCAPS Certificate Programs
College of Continuing and Professional Studies

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 16
- Degree: Manufacturing Operations Mgmt Certificate

The manufacturing operations management certificate can assist students to move into a position of greater responsibility in the manufacturing industry. Students learn about the most recent manufacturing industry practices and technologies and understand them from the perspective of competitive business demands.

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 approval of the program, up to 6 credits of transfer coursework may be used to satisfy requirements for this certificate.

Certificate Requirements
Core Requirements
- MM 3001W - Manufacturing in the Global Economy [WI] (3.0 cr)
- MM 4102 - Manufacturing Operations (3.0 cr)

Technical Electives
Choose ten credits from the following courses:
- MM 3205 - Engineering for Manufacturing Operations (3.0 cr)
- or MM 3305 - 3D Printing and Additive Manufacturing (3.0 cr)
- or MM 4011 - Design of Manufacturing Systems and Simulations (3.0 cr)
- or MM 4012 - Manufacturing Processes and Technology (3.0 cr)
- or MM 4035 - Global Supply Chain Management (3.0 cr)
- or MM 4039 - Manufacturing Outsourcing Decisions (3.0 cr)
- or MM 4045 - Regulated Industry Compliance (3.0 cr)
- or MM 4201 - Quality Engineering and Process Improvement (3.0 cr)
- or MM 4311 - Sustainable Lean Manufacturing (3.0 cr)
- or MM 4501 - Capstone (3.0 cr)
- or MM 4596 - Internship (1.0 - 4.0 cr)

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Information current as of August 24, 2018
Twin Cities Campus
Manufacturing Operations 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 2018
- Required credits in this minor: 16

The manufacturing operations management minor explores systems, processes, and tools integral to global enterprise. Study of the emerging manufacturing environment and quality engineering combines with technical elective options to enhance effectiveness in diverse research/production oriented industries (biomedical, chemical, construction, electronic, environmental, food, textiles, and transportation).

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.

Minor Requirements

Minor Coursework
MM 3001W is a prereq for 4011, 4012, 4045, 4102, and 4311.
MM 3001W - Manufacturing in the Global Economy [WI] (3.0 cr)
MM 4102 - Manufacturing Operations (3.0 cr)

Technical Electives
Take 10 or more credit(s) from the following:
- MM 3205 - Engineering for Manufacturing Operations (3.0 cr)
- MM 4011 - Design of Manufacturing Systems and Simulations (3.0 cr)
- MM 4012 - Manufacturing Processes and Technology (3.0 cr)
- MM 4035 - Global Supply Chain Management (3.0 cr)
- MM 4039 - Manufacturing Outsourcing Decisions (3.0 cr)
- MM 4045 - Regulated Industry Compliance (3.0 cr)
- MM 4201 - Quality Engineering and Process Improvement (3.0 cr)
- MM 4311 - Sustainable Lean Manufacturing (3.0 cr)
- MM 4596 - Internship (1.0 - 4.0 cr)
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 2018
- 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 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, 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

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)
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- COMM 1313W - Analysis of Argument [WI] (3.0 cr)
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- 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
Twin Cities Campus
Multidisciplinary Studies B.S.
CCAPS Individualized Degrees
College of Continuing and Professional Studies

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 majors must be completed with a letter grade of C- or better.

**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. Typically students use MdS 3001W to satisfy this requirement.

**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 2018
• 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 2018
- 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 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
- OJIB 3127 - Ojibwe Language for Teachers (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 2018
- 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

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 2018
- 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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses beyond 3 required (H or V, minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
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 2018
- 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 - Internship: 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 3640 - 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)
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 2018
- 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)

- EPSY 3301 - Introduction to Educational Psychology [SOCS] (3.0 cr)
- EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
- EPSY 3303 - Educational Psychology Undergraduate Practicum (3.0 cr)

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 3901, SOC 3811 or STAT 3011.

- 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)

APECS Electives: Select one course from a specialty area

Counseling and Student Personnel Psychology

Take 3 or more credit(s) from the following:
- EPSY 3302 - Introduction to Communication Skills for Educational and Community Settings (3.0 cr)
- EPSY 5461 - Cross-Cultural Counseling (3.0 cr)

Psychological Foundations of Education

Take 3 or more credit(s) from the following:
- EPSY 3101 - Creativity and Intelligence: an Introduction (3.0 cr)
- EPSY 5113 - Psychology of Instruction and Technology (3.0 cr)
- EPSY 5119 - Mind, Brain, and Education (3.0 cr)
- EPSY 5157 - Social Psychology of Education (3.0 cr)

Quantitative Methods in Education

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

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

Take 3 or more credit(s) from the following:
- 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 2018
• 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.

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 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
Students must complete the following coursework (12 credits).
EPSY 5616 - Classroom Management and Behavior Analytic Problem Solving (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 2018
- 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 30 credits before admission to the program.

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
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 4496.

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)
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
- 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)
- FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)

**Mathematics**
- CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
- CI 1826 - Social Justice Calculus [MATH] (3.0 cr)
- EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (3.0 cr)
- MATH 1001 - Excursions in Mathematics [MATH] (3.0 cr)
- MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
- STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
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)
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- APEC 1102 - Principles of Macroeconomics (3.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)

**Personal Leadership**

- OLPD 1302 - Personal Leadership in the University (3.0 cr)
- LEAD 1961W - Personal Leadership in the University [WI] (3.0 cr)

**Future Studies**

- 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)

**Business Writing**

- 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)
- OMT 3033W - Business Communication [WI] (3.0 cr)
- OLPD 3562W - Technical and Professional Writing [WI] (4.0 cr)
- 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 3496 - Profession and Practice of Business and Marketing Education (2.0 cr)

**Computer Applications for Business and Industry**

Students must choose one of the courses below.

- CI 5301 - Foundations of Computer Applications for Business and Education (3.0 cr)
- CI 1871 - Computer Literacy and Problem Solving (4.0 cr)
- IDSC 3001 - Introduction to Information Technology in Business (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 4496, or can coordinate a combination of all or some of the courses listed here. Students must consult and work closely with the applied experience coordinator.

- OLPD 4496 - Applied Experience in Business & Marketing Education (1.0 - 4.0 cr)
- OLPD 4420 - Practicum in Nonprofit Organizations (2.0 cr)
- 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 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
- OLPD 3380 - Developing Intercultural Competence (3.0 cr)
- OLPD 3828 - Diversity in the Workplace (3.0 cr)
- OLPD 4318 - Advanced Project Management (3.0 cr)
- OLPD 4401 - E-Marketing (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 3301 - Introduction to Quality Management (3.0 cr)
- ABUS 4022W - Management in Organizations [WI] (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)
- 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 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)

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• FSOS 4153 - Family Financial Counseling (3.0 cr)
• HRIR 3021 - Human Resource Management and Industrial Relations (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 4002 - Managerial Psychology (4.0 cr)
• MGMT 4008 - Entrepreneurial Management (4.0 cr)
• MGMT 4050 - Managing Innovation and Change In Action (2.0 cr)
• RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
• RM 2215 - Introduction to Retail Merchandising (3.0 cr)
• RM 3243 - Visual Merchandising (3.0 cr)
• RM 4117W - 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)
• WRIT 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)

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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 2018
• 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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 47 to 64
• Degree: Bachelor of Science

The undergraduate program in early childhood prepares students to work with young children 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 programs in early childhood education and elementary 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.

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

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)
EPSY 5681 - Education of Preschool Children With Disabilities: Methods and Materials (3.0 cr)

Student Teaching

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 26 - 29 credit(s) from the following:

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)

Public Health
PUBH 3003 - Fundamentals of Alcohol and Drug Abuse (2.0 cr)
or PUBH 3005 - Fundamentals of Alcohol and Drug Abuse for Teacher Education (1.0 cr)

Math
CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or Work with your major advisor to determine if other math courses would be appropriate.

• 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 5413 - Foundations of Reading (3.0 cr)
CI 5414 - Practicum: Working With Developing Readers (2.0 cr)
CI 3401W - Diversity in Children's Literature [WI] (3.0 cr)

• Elementary Ed Courses

• CI 3211 - Introduction to Elementary Teaching (3.0 cr)
CI 3212 - Practicum: Elementary Teaching (2.0 cr)

• Requirements 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. Take these four courses in particular:

- KIN 3327
- MTHE 3101 and 3102
- CI 3001
- Any physics/chemistry course with a lab (recommended: PHYS 3071W or CI 1563

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 12 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 12 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 74 to 78
- 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.

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 Justice 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)

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

#### Foundation Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI 5307</td>
<td>Technology for Teaching and Learning (1.5 cr)</td>
</tr>
<tr>
<td>PUBH 3003</td>
<td>Fundamentals of Alcohol and Drug Abuse (2.0 cr)</td>
</tr>
<tr>
<td>or PUBH 3005</td>
<td>Fundamentals of Alcohol and Drug Abuse for Teacher Education (1.0 cr)</td>
</tr>
<tr>
<td>CI 4121</td>
<td>Culture Power and Education (3.0 cr)</td>
</tr>
<tr>
<td>CI 4122</td>
<td>Social Class Education and Pedagogy (3.0 cr)</td>
</tr>
<tr>
<td>CPSY 2301</td>
<td>Introduction to Child Psychology [SOCS] (4.0 cr)</td>
</tr>
</tbody>
</table>

#### Introductory Block

The Introductory Block can be completed on campus or as a study abroad program in France taking MONT 3211, 3212, and 3119.

- **CI 3211** - Introduction to Elementary Teaching (3.0 cr)
- **CI 3212** - Practicum: Elementary Teaching (2.0 cr)
- **EPSY 5001** - Learning, Cognition, and Assessment (3.0 cr)
  - or **EPSY 3119** - Learning, Cognition, and Assessment (3.0 cr)
  - or **MONT 3211** - Introduction to Elementary School Teaching (3.0 cr)
- **MONT 3212** - Teaching Practicum (3.0 cr)
- **MONT 3119** - Learning, Cognition, and Assessment (3.0 cr)

#### Special Education Block

- **EPSY 5613** - Foundations of Special Education I [DSJ] (3.0 cr)
- **EPSY 5616** - Classroom Management and Behavior Analytic Problem Solving (3.0 cr)
- **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 3201W** - 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] (4.0 cr)
  - or **GEOG 3374W** - The City in Film [AH, WI] (4.0 cr)
  - or **GEOG 3973** - Geography of the Twin Cities [SOCS] (3.0 cr)
  - or **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)

#### 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)

#### Reading Processes and Development

- **CI 5413** - Foundations of Reading (3.0 cr)
  - or **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 2018
- 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 2018
• 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
- Requirements for this program are current for Fall 2018
- 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.

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
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 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)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 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)

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Information current as of August 24, 2018
Advanced/Applied Skill Course
Students must take FSOS 4294 or FSOS 4296 or FSOS 4160H (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 4160H - Honors Capstone Project (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. 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:
• YOST 3325W - Project-Based Writing For Education and Human Development Majors [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 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• FSOS 4109W - Family Theories [WI] (3.0 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)

or 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 4110 - Introduction to Family Therapy (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)

or 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 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)

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 2108 - Preparation for Family Financial Studies: Money Matters in Families (3.0 cr)
• FSOS 3101 - Personal and Family Finances (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 4110 - Introduction to Family Therapy (3.0 cr)
• FSOS 4150 - Special Topics in Family Social Science (1.0 - 4.0 cr)
• FSOS 4152 - Gay, Lesbian, Bisexual and Transgender People in Families (3.0 cr)
• FSOS 4153 - Family Financial Counseling (3.0 cr)
• FSOS 4154 - Families and Aging (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)
• FSOS 5932 - Introduction to Parent Education (1.0 cr)
• FSOS 5937 - Parent-Child Interaction (3.0 cr)
• FSOS 5943 - Parent Learning and Development: Implications for Parent Education (2.0 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 2018
• 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 2103 - Family Policy (3.0 cr)
• FSOS 2106 - Family Resource Management (3.0 cr)
• FSOS 3101 - Personal and Family Finances (3.0 cr)
• FSOS 3104 - Global and Diverse Families [SOCS, GP] (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 4104 - Family Psychology (3.0 cr)
• FSOS 4109W - Family Theories [WI] (3.0 cr)
• FSOS 4152 - Gay, Lesbian, Bisexual and Transgender People in Families (3.0 cr)
• FSOS 4154 - Families and Aging (3.0 cr)
• FSOS 4155 - Parent-Child Relationships (3.0 cr)
• FSOS 5902 - Family Education Perspectives (3.0 cr)
• FSOS 5932 - Introduction to Parent Education (1.0 cr)
• FSOS 5937 - Parent-Child Interaction (3.0 cr)
• FSOS 5943 - Parent Learning and Development: Implications for Parent Education (2.0 cr)
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 2018
- 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 4110 - 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 2018
- 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)
- CSPH 5211 - Peacemaking and Spirituality: A Journey Toward Healing and Strength (2.0 - 3.0 cr)
- FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
- FSOS 3104 - Global and Diverse Families [SOCS, GP] (3.0 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 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
- SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
- SOC 4109 - Domestic Criminal Violence (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)
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 2018
• 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, recreation, personal wellness and nutrition can be promoted in their professional career and integrate 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, leisure and wellness.

All students will take the required courses that total 14 credits. The required courses focus strongly on how to understand and integrate wellness promotion and leisure, and include 2 physical activity courses to give students a better understanding of physical activity promotion. Students will then be able to choose elective course/s to finish their minor and allow them to focus on a course/s that best fits with their education and professional goals. This should be discussed with the minor coordinator.

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
Required courses
KIN 3001 - Lifetime Health and Wellness [SOCS] (3.0 cr)
KIN 4214 - Health Promotion (3.0 cr)
REC 3601W - Leisure and Human Development [WI] (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)

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)
ar PE 1048 - Bowling (1.0 cr)  
ar PE 1053 - Ice Skating (1.0 cr)  
ar PE 1055 - Golf (1.0 cr)  
ar PE 1057 - Beginning Skiing (1.0 cr)  
ar PE 1058 - Snowboarding (1.0 cr)  
ar PE 1065 - Beginning Tumbling and Gymnastics (1.0 cr)  
ar PE 1067 - Basketball (1.0 cr)  
ar PE 1071 - Beginning Cricket (1.0 cr)  
ar PE 1072 - Soccer (1.0 cr)  
ar PE 1074 - Beginning Volleyball (1.0 cr)  
ar PE 1107 - Intermediate Swimming (1.0 cr)  
ar PE 1135 - Intermediate Karate (1.0 cr)  
ar PE 1137 - Intermediate Squash (1.0 cr)  
ar PE 1146 - Intermediate Taekwondo (1.0 cr)  
ar PE 1154 - Figure Skating (1.0 cr)  
ar PE 1174 - Intermediate Volleyball (1.0 cr)  
ar PE 1205 - Scuba and Skin Diving (1.0 cr)  
ar PE 1262 - Marathon Training (3.0 cr)  
ar PE 1720 - Special Activities in Physical Education (1.0 - 3.0 cr)

**Elective Courses**

Students must take one additional course or courses totaling 2 credits or more from the designated courses. Additional electives will be available in consultation with the health promotion and wellness minor program coordinator.

**REC 4271 - Community Leisure Services for Persons with Disabilities (3.0 cr)**

**or SMGT 3601 - Ethics and Values in Sport (2.0 cr)**

**or SMGT 3601 - Sport and Recreation Law (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 3104 - Global and Diverse Families [SOCS, GP] (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 3000 - Topics in Integrative Health (1.0 - 4.0 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 3211 - Living on Purpose: An Exploration of Self, Purpose, and Community (2.0 cr)**

**or CSPH 3301 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)**

**or CSPH 4311 - Foundations of Hatha Yoga: Alignment & Movement Principles (3.0 cr)**

**or CSPH 4312 - Hatha Yoga Philosophy, Lifestyle, & Ethics (3.0 cr)**

**or CSPH 4313 - Hatha Yoga Teaching Principles & Methodology (2.0 cr)**

**or PSY 3206 - Introduction to Health Psychology (3.0 cr)**

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

**or SOC 4246 - Sociology of Health and Illness (3.0 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 2018
• 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 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

Admission requirements include 30 credits, completed or in progress.

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
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.

Foundation Courses
These courses are intended to be taken as prerequisites to the major, although this is not strictly required. Student 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 Justice Calculus [MATH] (3.0 cr)
or EPSY 1261 - Understanding Data Stories through Visualization & Computing [MATH] (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 STAT 1001 - Introduction to the Ideas of Statistics [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)

Personal Leadership
OLPD 1302 - Personal Leadership in the University (3.0 cr)
or LEAD 1961W - Personal Leadership in the University [WI] (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 3601 - Introduction to Human Resource Development (3.0 cr)
OLPD 3202 - Introduction to Strategies for Teaching Adults (3.0 cr)
OLPD 3620 - Introduction to Training and Development (3.0 cr)
OLPD 3640 - Introduction to Organization Development (3.0 cr)
OLPD 3696 - Profession and Practice of Human Resource Development (2.0 cr)
OLPD 4696 - Internship: 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. Take 3 or more credit(s) from the following:
• OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
• OLPD 3318 - Introduction to Project Management (3.0 cr)
• OLPD 3380 - Developing Intercultural Competence (3.0 cr)
• OLPD 3828 - Diversity in the Workplace (3.0 cr)
• OLPD 4318 - Advanced 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 4104 - Management and Human Resource Practices (3.0 cr)
• COMM 3441 - Introduction to Organizational Communication (3.0 cr)
• HIRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
• HIRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
• HIRIR 3041 - The Individual in the Organization (2.0 cr)
• HIRIR 3042 - The Individual and Organizational Performance (2.0 cr)
• HIRIR 3051 - Compensation: Theory and Practice (2.0 cr)
• HIRIR 3071 - Union Organizing and Labor Relations (2.0 cr)
• HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
• MGMT 3004 - Business Strategy (3.0 cr)
• MGMT 4002 - Managerial Psychology (4.0 cr)
• PSY 3711 - Psychology in the Workplace (3.0 cr)
• 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:

• 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 2018
- 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 3620 - Introduction to Training and Development (3.0 cr)
OLPD 3640 - 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 - Internship: 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 - Adm
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 grouping 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.

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 develop a degree plan that includes:
- Academic and career goals
- Courses proposed for the program

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
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
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 Justice 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 OLPD 1302 or 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

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

Practicum Requirements
EPSY 3133 or EPSY 3303

Autism Spectrum Disorder
EPSY 5616, EPSY 5631, EPSY 5632, EPSY 5661, EPSY 5663

Business and Marketing Education
OLPD 3318, OLPD 3401, OLPD 3424, OLPD 4426

Coaching (Two Area option)
Current CPR and AED Certification through national certification agency
KIN 3114, KIN 4641, KIN 4697

Organizational Development
KIN 5725 or SMGT 3143

Human Anatomy
KIN 3027

Coaching (Three Area option)
Current CPR and AED Certification through national certification agency
KIN 3114, KIN 4641, KIN 4697

Organizational development
KIN 5725 or SMGT 3143

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

Human Resource Development
OLPD 3601, OLPD 3620, OLPD 3640, OLPD 4696

Leadership
Core Courses: *must be taken sequentially
LEAD 3961: Leadership, You, & Your Community
LEAD 3971: Field Experience
LEAD 4961W: Leadership for Global Citizenship

Outdoor Recreation and Education
REC 2151, (REC 3321 or REC 3322), REC 4311, REC 4161

Social Justice
SW 3501, SW 4501, (SW 2501W or SW 1501)

Special Education
EPSY 2601, EPSY 5613, (EPSY 5114 or EPSY 3119)

Sport Management
SMGT 3111, SMGT 3143, SMGT 3421, SMGT 3631

Teaching English as a Second Language
LING 3001 or LING 5001 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:
- OLPD 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)
- CPSY 5251W - Social and Philosophical Foundations of Early Childhood Education [WI] (3.0 cr)
- FSOS 4109W - Family Theories [WI] (3.0 cr)
- CI 4311W - Technology and Ethics in Society [CIV, WI] (3.0 cr)
- REC 3541W - Recreation Programming [WI] (3.0 cr)
- REC 3601W - Leisure and Human Development [WI] (3.0 cr)
- SMGT 3881W - Senior Seminar in Sport Management [WI] (3.0 cr)
- YOST 4401W - Young People's Spirituality and Youthwork: An Introduction [WI] (4.0 cr)
- KIN 3126W - Sport and Exercise Psychology [WI] (3.0 cr)
- EPSY 5619W - Specialized Interventions in Mathematics for Students with Mild to Moderate Disabilities [WI] (3.0 cr)
- CI 3611W - Basics in Teaching English as a Second Language [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, or coaching, outdoor and recreation, 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 2018
• 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, 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, 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 licensure, physical therapy, preventative and rehabilitation medicine, psychology of sport and exercise, sport management, and sport sociology.

Examples of career choices for graduates with a BS in kinesiology include: athletic performance training, coaching, exercise testing and prescription in clinical and health settings, personal training in health clubs and corporate settings, pharmaceutical sales, physical therapist, physical education teacher, occupational therapist, public health management, fitness/sport/medical device sales, wellness and fitness specialist, and youth sports director.

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 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

To be eligible to apply to the major, students must have:
At least 60 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

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
NOTE: Students are strongly encouraged to take a math/statistics course before entering the major.

Students pursuing the MEd/initial licensure program in physical education must have a 2.80 GPA in the undergraduate program and meet other requirements.

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

**Required prerequisites**

### Psychology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PSY 1001</td>
<td>Introduction to Psychology [SOCS] (4.0 cr)</td>
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<tr>
<td>or PSY 1001H</td>
<td>Honors Introduction to Psychology [SOCS] (4.0 cr)</td>
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</tr>
<tr>
<td>or EPSY 1281</td>
<td>Psychological Science Applied [SOCS] (4.0 cr)</td>
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### Biology Course with Lab

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 1001</td>
<td>Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)</td>
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<tr>
<td>or BIOL 1001H</td>
<td>Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)</td>
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<tr>
<td>or BIOL 1009</td>
<td>General Biology [BIOL] (4.0 cr)</td>
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<tr>
<td>or BIOL 1009H</td>
<td>Honors: General Biology [BIOL] (4.0 cr)</td>
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<tr>
<td>or BIOL 1015</td>
<td>Human Physiology, Technology, and Medical Devices [BIOL, TS] (4.0 cr)</td>
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<tr>
<td>or FSCN 2021</td>
<td>Introductory Microbiology (4.0 cr)</td>
<td></td>
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<tr>
<td>or BIOL 1951H</td>
<td>Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)</td>
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<tr>
<td>or BIOL 1961H</td>
<td>Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)</td>
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<tr>
<td>or BIOL 1951</td>
<td>Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)</td>
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<tr>
<td>or BIOL 1961</td>
<td>Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)</td>
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### Chemistry Course with Lab

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 1015</td>
<td>Introductory Chemistry: Lecture [PHYS] (3.0 cr)</td>
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<tr>
<td>CHEM 1017</td>
<td>Introductory Chemistry: Laboratory [PHYS] (1.0 cr)</td>
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<tr>
<td>or CHEM 1061</td>
<td>Chemical Principles I [PHYS] (3.0 cr)</td>
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<tr>
<td>or CHEM 1065</td>
<td>Chemical Principles I Laboratory [PHYS] (1.0 cr)</td>
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<tr>
<td>or CHEM 1062</td>
<td>Chemical Principles II [PHYS] (3.0 cr)</td>
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<tr>
<td>or CHEM 1066</td>
<td>Chemical Principles II Laboratory [PHYS] (1.0 cr)</td>
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<tr>
<td>or CHEM 1071H</td>
<td>Honors Chemistry I [PHYS] (3.0 cr)</td>
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<tr>
<td>or CHEM 1075H</td>
<td>Honors Chemistry I Laboratory [PHYS] (1.0 cr)</td>
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<tr>
<td>or CHEM 1072H</td>
<td>Honors Chemistry II [PHYS] (3.0 cr)</td>
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<tr>
<td>or CHEM 1076H</td>
<td>Honors Chemistry II Laboratory [PHYS] (1.0 cr)</td>
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### Physics Course with Lab

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 1101W</td>
<td>Introductory College Physics I [PHYS, WI] (4.0 cr)</td>
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<tr>
<td>or PHYS 1201W</td>
<td>Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)</td>
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<tr>
<td>or PHYS 1301W</td>
<td>Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)</td>
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<tr>
<td>or PHYS 1401V</td>
<td>Honors Physics I [PHYS, WI] (4.0 cr)</td>
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### Introduction to Kinesiology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>KIN 1871</td>
<td>Survey of Kinesiology, Recreation, and Sport (3.0 cr)</td>
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### Human Anatomy

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>KIN 3027</td>
<td>Human Anatomy for Kinesiology Students (3.0 cr)</td>
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<tr>
<td>or ANAT 3001</td>
<td>Human Anatomy (3.0 cr)</td>
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<tr>
<td>or ANAT 3601</td>
<td>Principles of Human Anatomy (3.0 cr)</td>
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<tr>
<td>or ANAT 3611</td>
<td>Principles of Human Anatomy (3.0 cr)</td>
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</tr>
</tbody>
</table>

### 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>KIN 3112</td>
<td>Introduction to Biomechanics (4.0 cr)</td>
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</tr>
<tr>
<td>KIN 3126W</td>
<td>Sport and Exercise Psychology [WI] (3.0 cr)</td>
<td></td>
</tr>
</tbody>
</table>
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, including at least one course from each of the three following categories:

Aquatics/Dance/Posture
Take 1 or more course(s) from the following:
- PE 1007 - Beginning Swimming (1.0 cr)
- PE 1016 - Posture and Individual Exercise (1.0 cr)
- PE 1107 - Intermediate Swimming (1.0 cr)
- PE 1205 - Scuba and Skin Diving (1.0 cr)
- DNCE 1001 - Modern/Contemporary Dance Technique 1 (1.0 cr)
- DNCE 1002 - Modern/Contemporary Dance Technique 2 (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 1315 - Flamenco (1.0 cr)
- DNCE 1323 - Swing Dance (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)
- DNCE 1351 - African Diasporic Movement 1 (1.0 cr)
- DNCE 1352 - African Diasporic Movement 2 (1.0 cr)
- DNCE 1353 - African Diasporic Movement 3 (1.0 cr)
- DNCE 1354 - African Diasporic Movement 4 (1.0 cr)
- DNCE 3010 - Modern/Contemporary Dance Technique 5 (2.0 cr)
- DNCE 3020 - Modern/Contemporary Dance Technique 6 (2.0 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 3311 - Contemporary Indian Dance 1 (1.0 cr)
- DNCE 3312 - Contemporary Indian Dance 2 (1.0 cr)
- DNCE 3337 - Body Mind Centering (2.0 cr)
- DNCE 3351 - African Diasporic Movement 5 (1.0 cr)
- DNCE 3352 - African Diasporic Movement 6 (1.0 cr)

Individual Sports/Team Sport
Take 1 or more course(s) from the following:
- 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 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 1078 - Ultimate Disc (1.0 cr)
• PE 1079 - Rugby (Non-contact) (1.0 cr)
• PE 1135 - Intermediate Karate (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 1174 - Intermediate Volleyball (1.0 cr)

Conditioning/Weight Training
Take 1 or more course(s) from the following:
• PE 1012 - Beginning Running (1.0 cr)
• PE 1014 - Conditioning (1.0 cr)
• PE 1015 - Weight Training (1.0 cr)
• PE 1262 - Marathon Training (3.0 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 3168 - Soccer Coaching Theory and Skill Development (2.0 cr)
or KIN 3169 - Volleyball Coaching Theory and Skill Development (2.0 cr)
or KIN 3171 - Baseball Coaching Theory and Skill Development (2.0 cr)
or KIN 3172 - Basketball Coaching Theory and Skill Development (2.0 cr)
or KIN 3173 - Football Coaching Theory and Skill Development (2.0 cr)
or KIN 3178 - Tennis Coaching Theory and Skill Development (2.0 cr)
or KIN 3179 - Track and Field Coaching Theory and Skill Development (2.0 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 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 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 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 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 5375 - Youth Sport Science (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 - Advanced Electrocardiogram Interpretation (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 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)
Twin Cities Campus
Learning Technologies Minor
Curriculum & Instruction
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 15
- No.

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)
• 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 - Internet and 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)
Outdoor Recreation and Education Minor
Kinesiology, School of
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 15

The outdoor recreation and education minor provides students with the opportunity to study a specific area of the recreation and leisure field. While students can take other coursework related to leadership, management, policy, programming, and tourism, no other University classes have a specific outdoor focus.

The priority of the outdoor recreation and education minor would be to provide students with education and skills training necessary to be successful in this field. Students will concentrate on the following:

1) Specific leadership skills to work with groups and individuals from various socioeconomic backgrounds, with varying physical and cognitive abilities, from all age groups, races, and orientations, along with the understanding of leadership roles, methods and models;
2) The development, implementation, and evaluation of programs and services to meet the needs of these populations;
3) Policy and management related to our public land for both use by our citizens and also preservation for the enjoyment of future generations;
4) Understanding the use of our outdoor resources and the economic and environmental impact created;
5) Eco-tourism and sustainability;
6) Global impacts based on the use of outdoor spaces, pollution, climate changes, and others.

Students in the minor will benefit from the many alumni and community partners that have a vested interest in the education and training of our future professionals. Specific individual projects and/or research will be conducted with related agencies that will provide not only real-world, relevant experience and skill development, but establish mentor relationships and premium opportunities for networking in the industry.

For more detailed information regarding this free standing minor, visit: z.umn.edu/oreminor

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

Minor Requirements
Student must complete 15 credits from the designated list for the ORE minor.

Required courses
RE 2151 - Outdoor and Camp Leadership (3.0 cr)
RE 4311 - Programming Outdoor & Env Ed (3.0 cr)
RE 4161 - Recreation Land Policy (3.0 cr)
RE 3321 - Outdoor Recreation 3-Season Skills (3.0 cr)
or RE 3322 - Outdoor Recreation Winter Skills (3.0 cr)

Electives
Other electives may be accepted after consultation with your advisor.
Take 3 or more credit(s) from the following:
• RE 4191 - Adventure Recreation, Tourism, and Eco-Tourism (3.0 cr)
• RE 4301 - Wilderness and Adventure Education (4.0 cr)
• RE 3993 - Directed Study in Recreation Administration (1.0 - 9.0 cr)
• ESPM 2401 - Environmental Education/Interpretation (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
• ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (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 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
• FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
• FNRM 3101 - Park and Protected Area Tourism (3.0 cr)
• FNRM 3104 - Forest Ecology (4.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• LEAD 1961W - Personal Leadership in the University [WI] (3.0 cr)
• LEAD 3961 - Leadership, You, and Your Community (3.0 cr)
• SSM 1004 - Sustainable Systems Management Orientation (1.0 cr)
• SSM 2003 - Systems Thinking: Development and Applications in Sustainability (3.0 cr)
• SSM 3301 - Global Water Resource Use and Sustainability [ENV] (3.0 cr)
• YOST 2241 - Experiential Learning (4.0 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 2018
• 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

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 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (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 - American Indian Peoples in the United States [DSJ] (3.0 cr)
• AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)
• AMIN 1201 - Racial Formation and Transformation in the United States [SOCS, 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 - American Indian 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 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CHIC 3221 - Introduction to Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (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)
• CHIC 3672 - Chicana/o Experience in the Midwest [DSJ] (3.0 cr)
• CHIC 3888 - Immigration and the U.S. Latina/o Experience: Diaspora, Identity, and Community [HIS, DSJ] (3.0 cr)
• CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 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)
• GWSS 1002 - Politics of Sex [SOCS, DSJ] (3.0 - 4.0 cr)
• GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
• GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
• GWSS 3306 - Pop Culture Women [AH, DSJ] (3.0 cr)
• GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
• GWSS 3406 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)
• GWSS 4002 - Western African History: 1800 to Present [GP] (3.0 cr)
or GWSS 4031 - 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, DSJ] (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 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)
• AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
or POL 1019 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
or 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 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 4525W - Federal Indian Policy [WI] (3.0 cr)
or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• AAS 3490W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or GWSS 3490W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or AAS 3500W - 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 [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)
or 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)
or 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)
• 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)
or GWSS 3410 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
or CHIC 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or HIST 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or CHIC 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
or GLOS 3634 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
or HIST 3444 - Chicana and Chicano History: 1821-1945 [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 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
or POL 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
or CHIC 4232 - Chicana/o - Latina/o Gender and Sexuality Studies [AH, DSJ] (3.0 cr)
or GLBT 4232 - Chicana/o - Latina/o Gender and Sexuality Studies [AH, DSJ] (3.0 cr)
or 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)
or GWSS 1007 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
or GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (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 3305 - Queer Cinema [AH] (3.0 cr)
or GLBT 3305 - Queer Cinema [AH] (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)
• 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)
or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• AAS 3211W - American Race Relations [DSJ, WI] (3.0 cr)
or SOC 3211W - American Race Relations [DSJ, WI] (3.0 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, 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 4311W - Technology and Ethics in Society [CIV, WI] (3.0 cr)
- CI 5137 - Multicultural Gender-Fair Curriculum (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)
- CI 3901 - Exploring the Teaching Profession I (2.0 cr)
- EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
- FSOS 2103 - Family Policy (3.0 cr)
or FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
- FSOS 3104 - Global and Diverse Families [SOCS, GP] (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)
- FSOS 4152 - Gay, Lesbian, Bisexual and Transgender People in Families (3.0 cr)
or FSOS 4155 - Parent-Child Relationships (3.0 cr)
or 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)
or OLPD 4870 - Introduction to Integrating Human Rights into Organizational Leadership (3.0 cr)
or POL 3319 - Education and the American Dream [SOCS, DSJ] (3.0 cr)
or SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- SOC 3003 - Social Problems (3.0 cr)
or SOC 3452 - Education and Society (3.0 cr)
or SOC 5455 - Sociology of Education (3.0 cr)
or SW 2501W - Introduction to Social Justice [DSJ, WI] (4.0 cr)
or SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)
or WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
or WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
or URB 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
or URB 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
or URB 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
or YOST 2101 - Urban Youth and Youth Issues [DSJ] (4.0 cr)
or YOST 3001 - Introduction to History & Philosophy of Youthwork (4.0 cr)
or YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
or YOST 3240 - Special Topics in Youth Studies (2.0 - 8.0 cr)
or 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)
or YOST 3032 - Adolescent and Youth Development for Youthsworkers (4.0 cr)
or YOST 5032 - Adolescent and Youth Development for Youthsworkers (4.0 cr)
Twin Cities Campus
Recreation Administration B.S.
Kinesiology, School of
College of Education and Human Development

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 62
• Degree: Bachelor of Science

The undergraduate program in recreation administration prepares students to assume leadership, supervisory, or beginning administrative responsibilities, and design and deliver recreation programs to diverse populations in a variety of settings. In addition to the general education requirements, core professional courses give students a firm foundation in the recreation field. Students further define their career interests by selecting focus electives that allow them to combine recreation with other disciplines such as health and wellness, social work, youth studies, sports management, outdoor education and tourism.

The program features a 9-credit internship experience, which allows students to integrate theory and practical applications in the field. Students select an organization that will provide an experiential learning opportunity in their specific area of interest.

Graduates may find employment in such locations as nonprofits (YMCA, Campfire, Boy Scouts of America, etc.), parks at the municipal, state, or national level, commercial recreation, outdoor education and natural resources, outdoor recreation and tourism, as well as corporate wellness, campus and military recreation and event management.

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 must complete at least 30 credits of the University's requirements and have earned a minimum overall GPA of 2.00, with preference given to applicants with a higher average.

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
Requirements include a minimum 2.00 GPA.

Foundation Courses
For additional college requirements, consult with an SPS program advisor.

PE
Take 3 or more 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 1078 - Ultimate Disc (1.0 cr)
• PE 1079 - Rugby (Non-contact) (1.0 cr)
• PE 1107 - Intermediate Swimming (1.0 cr)
• PE 1135 - Intermediate Karate (1.0 cr)
• PE 1137 - Intermediate Squash (1.0 cr)
• PE 1146 - Intermediate Tae Kwan Do (1.0 cr)
• PE 1147 - Figure Skating (1.0 cr)
• PE 1174 - Intermediate Volleyball (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)

Public Speaking
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)
QLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)
FSOS 1461 - Presentations at Work: Families, Communities, Nonprofits, and Schools [CIV] (3.0 cr)

Sociology or Psychology
Students should take one or more of the following courses:
SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)

Required Core Courses
Students are required to take 9 credits of REC 3796.

REC 1501 - Orientation to Leisure and Recreation (3.0 cr)
REC 3281 - Research and Evaluation in Recreation Administration (4.0 cr)
REC 3541W - Recreation Programming [WI] (3.0 cr)
REC 3551 - Recreation Administration and Finance (4.0 cr)
REC 3601W - Leisure and Human Development [WI] (3.0 cr)
REC 3796 - Senior Internship in Recreation Administration (3.0 - 9.0 cr)
REC 4271 - Community Leisure Services for Persons with Disabilities (3.0 cr)
SMGT 3861 - Sport and Recreation Law (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:
• REC 3541W - Recreation Programming [WI] (3.0 cr)
• REC 3601W - Leisure and Human Development [WI] (3.0 cr)

Electives (20 credits)
Students must take 20 elective credits. Students should consult with their department academic advisor on course choices that best fit with their academic and professional goals. The following are some possible electives in each focus area. This list is not exhaustive and...
students may consult with their faculty advisor for approval on courses not listed.

**Electives**

Take 20 or more credit(s) from the following:

- **REC 1600** - Topics in Recreation Administration (1.0 - 4.0 cr)
- **REC 2151** - Outdoor and Camp Leadership (3.0 cr)
- **REC 3321** - Outdoor Recreation 3-Season Skills (3.0 cr)
- **REC 3955** - Directed Study in Recreation Administration (1.0 - 9.0 cr)
- **REC 4161** - Recreation Land Policy (3.0 cr)
- **REC 4191** - Adventure Recreation, Tourism, and Eco-Tourism (3.0 cr)
- **REC 4301** - Wilderness and Adventure Education (4.0 cr)
- **REC 4311** - Programming Outdoor & Env Ed (3.0 cr)
- **REC 4900** - Special Topics: Contemporary Issues in Leisure Services (1.0 - 12.0 cr)
- **KIN 3001** - Lifetime Health and Wellness [SOCS] (3.0 cr)
- **KIN 4214** - Health Promotion (3.0 cr)
- **SMGT 1701** - Introduction to Sport Management (2.0 cr)
- **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 3601** - Ethics and Values in Sport (2.0 cr)
- **SMGT 3631** - Sport Marketing (3.0 cr)
- **SMGT 3632** - Sport Sales and Fund-raising (3.0 cr)
- **ACCT 2050** - Introduction to Financial Reporting (4.0 cr)
- **CPSY 2301** - Introduction to Child Psychology [SOCS] (4.0 cr)
- **CPSY 4303** - Adolescent Psychology (3.0 cr)
- **CPSY 4311** - Behavioral and Emotional Problems of Children (3.0 cr)
- **CPSY 4313W** - Disabilities and Development [WI] (4.0 cr)
- **CPSY 4334W** - Children, Youth in Society [WI] (3.0 cr)
- **CSPH 3101** - Creating Ecosystems of Well-Being (2.0 cr)
- **CSPH 5111** - Ways of Thinking about Health (2.0 cr)
- **CSPH 5115** - Cultural Awareness, Knowledge and Health (3.0 cr)
- **CSPH 5118** - Whole Person, Whole Community: The Reciprocity of Wellbeing (3.0 cr)
- **CSPH 5121** - Whole Systems Healing: Health and the Environment (2.0 cr)
- **CSPH 5523** - Applications in Therapeutic Horticulture (2.0 cr)
- **CSPH 5642** - Nature Heals: An Introduction to Nature-Based Therapeutics (3.0 cr)
- **CSPH 5643** - Horse as Teacher: Intro to Nature-Based Therapeutics Equine-Assisted Activities & Therapies (EAAT) (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 3101** - Park and Protected Area Tourism (3.0 cr)
- **FSOS 1201** - Human Development in Families: Lifespan [SOCS, DSJ] (4.0 cr)
- **FSOS 3102** - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
- **FSOS 3104** - Global and Diverse Families [SOCS, GP] (3.0 cr)
- **FSOS 4101** - Sexuality and Gender in Families and Close Relationships (3.0 cr)
- **FSOS 4104** - Family Psychology (3.0 cr)
- **FSOS 4154** - Families and Aging (3.0 cr)
- **LEAD 1961W** - Personal Leadership in the University [WI] (3.0 cr)
- **LEAD 3961** - Leadership, You, and Your Community (3.0 cr)
- **MGMT 3001** - Fundamentals of Management (3.0 cr)
- **MGMT 3010** - Introduction to Entrepreneurship (4.0 cr)
- **OLPD 3601** - Introduction to Human Resource Development (3.0 cr)
- **OLPD 3620** - Introduction to Training and Development (3.0 cr)
- **OLPD 3640** - Introduction to Organization Development (3.0 cr)
- **YOST 1001** - Seeing Youth, Thinking Youth: Media, Popular Media, and Scholarship [CIV] (3.0 cr)
- **YOST 2101** - Urban Youth and Youth Issues [DSJ] (4.0 cr)
- **YOST 2241** - Experiential Learning (4.0 cr)
- **YOST 3032** - Adolescent and Youth Development for Youthworkers (4.0 cr)
- **YOST 3101** - Youthwork: Orientations and Approaches (4.0 cr)
- **YOST 3234** - Youth Agencies, Organizations, and Youth Service Systems (3.0 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 2018
• 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 - American Race Relations [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 - American Indian 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/o 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 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
• CHIC 3886 - 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)
• CI 4121 - Culture Power and Education (3.0 cr)
• CI 4122 - 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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
• GLOS 3402 - Human Rights Internship (3.0 cr)

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Information current as of August 24, 2018
•GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 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)
•PHIL 3307 - Social Justice and Community Service [AH, CIV] (4.0 cr)
•SOC 3003 - Social Problems (3.0 cr)
•SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
•SOC 3211W - American Race Relations [DSJ, WI] (3.0 cr)
•SOC 3222W - 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)
•TH 5117 - Performance and Social Change (3.0 cr)
•WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
•YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
•YOST 4314 - Theater Activities in Youthwork and Education (2.0 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)
•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 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 [DSJ] (4.0 cr)
  or HECU 3573 - Inequality in America: Internship and Integration Seminar [CIV] (8.0 cr)
  or HECU 3555W - Making Media & Change: Digital Technologies, Storytelling, and Activism From Consumers to Creators [AH, TS, 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 Environmental & Climate Justice [ENV] (4.0 cr)
  or HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change [SOCS] (4.0 cr)
  or HECU 3593 - Environmental Sustainability Sci, Public Policy, & Cmty Action Field Research Method & Investigation (4.0 cr)
  or HECU 3594 - Environmental Sustainability Sci, Public Policy, & Cmty Action Internship [CIV] (4.0 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 3866 - Arab American Experiences (3.0 cr)
  or ALL 3866 - Arab American Experiences (3.0 cr)
•CHIC 3212 - Chicana Studies: 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)
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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 61 to 71
• 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

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)**
**WRIT 1301 - University Writing (4.0 cr)**
or **WRIT 1401 - Writing and Academic Inquiry (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 1115 - 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 1115 - 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

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
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 5616 - Classroom Management and Behavior Analytic Problem Solving (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 5640W - Specialized Interventions in Mathematics for Students with Mild to Moderate Disabilities [WI] (3.0 cr)
EPSY 5604 - Transition From School to Work and Community Living for Persons With Special Needs (3.0 cr)
EPSY 5605 - Collaborative Practices for the Special Educator (3.0 cr)
EPSY 5657 - Interventions for Behavioral Problems in School Settings (3.0 cr)
EPSY 5620 - Module 1: Introduction to Augmentative and Alternative Communication (1.0 cr)
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
EPSY 5611 - Research-based Practices in Academic and Behavior Disabilities (3.0 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)

or EPSY 5701 - Practicum: Field Experience in General Education - Inclusive Classrooms (1.0 - 2.0 cr)
EPSY 3119 - Learning, Cognition, and Assessment (3.0 cr)
or EPSY 5001 - Learning, Cognition, and Assessment (3.0 cr)

Standards of Effective Practice
All students are required to take the following courses:
OLPD 5005 - School and Society (2.0 cr)
PUBH 3005 - Fundamentals of Alcohol and Drug Abuse for Teacher Education (1.0 cr)
OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
CI 5307 - Technology for Teaching and Learning (1.5 cr)
CPSY 3301 - Introduction to Child Psychology [SOCS] (4.0 cr)

or CPSY 3001 - 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 5614W - Assessment and Due Process in Special Education [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)
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 5616 - Classroom Management and Behavior Analytic Problem Solving (3.0 cr)
EPSY 5617 - Academic and Social Interventions for Students with Mild to Moderate Disabilities (3.0 cr)
EPSY 5604 - Transition From School to Work and Community Living for Persons With Special Needs (3.0 cr)
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
EPSY 3303 - Educational Psychology Undergraduate Practicum (3.0 cr)

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)
- PHIL 3307 - Social Justice and Community Service [AH, CIV] (4.0 cr)
- SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3211W - American Race Relations [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 5614W - Assessment and Due Process in Special Education [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)

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)
- 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)
- SLHS 3401 - Communication Differences and Disorders [SOCS] (3.0 cr)

Mental health, well-being, and resilience
- PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
- PUBH 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 3950 - From Kid to Community: Personal, Social and Environmental Influences on Youth Obesity (2.0 cr)
- PUBH 3955 - Using Policy to Address Child & Adolescent Obesity Prevention (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
[Students can take CI 1943W beginning spring 2019]
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 5113 - Psychology of Instruction and Technology (3.0 cr)
EPSY 5119 - Mind, Brain, and Education (3.0 cr)
EPSY 5157 - Social 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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 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 60 credits before admission to the program.

To be eligible to apply for the major, students must have at least 60 credits completed or in progress.

Admission preference is given to students who have completed liberal education requirements and have an overall GPA of 2.00 before the admission deadline. Because of a large number of applicants, a 2.75 GPA is recommended.

NOTE: Students are strongly encouraged to take a math/statistics course before entering the major. Two possible options are STAT 1001 or STAT 3011.

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)
CI 1871 - Computer Literacy and Problem Solving (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
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 1078 - Ultimate Disc (1.0 cr)
• PE 1079 - Rugby (Non-contact) (1.0 cr)
• PE 1107 - Intermediate Swimming (1.0 cr)
• PE 1135 - Intermediate Karate (1.0 cr)
• PE 1137 - Intermediate Squash (1.0 cr)
• PE 1146 - Intermediate Tae Kwon Do (1.0 cr)
• PE 1154 - Figure Skating (1.0 cr)
• PE 1174 - Intermediate Volleyball (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)

Psychology
EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
or PSY 1001 - 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. They are strongly encouraged to take SMGT 3632 and are encouraged to select a related minor area of focus or study. Students are required to
complete the focus elective proposal form and meet with their sport management advisor prior to registering for and completing classes. These 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 2751 - Sport and Wellness in China (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 5804 - National Collegiate Athletic Association (NCAA) Compliance (2.0 cr)
- REC 3541W - Recreation Programming [WI] (3.0 cr)
- REC 3601W - Leisure and Human Development [WI] (3.0 cr)
- REC 4271 - Community Leisure Services for Persons with Disabilities (3.0 cr)
- ACT 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)
- COMM 3210 - Introduction to Electronic Media Production (4.0 cr)
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 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 1302 - Personal Leadership in the University (3.0 cr)
- OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
- OLPD 3401 - Teaching Marketing Promotion (3.0 cr)
- OLPD 3424 - Sales Training (3.0 cr)
- OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
- OLPD 3640 - Introduction to Organization Development (3.0 cr)
- OLPD 4401 - E-Marketing (3.0 cr)
- OLPD 4426 - Strategic Customer Relationship Management (3.0 cr)
- OLPD 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 Industrial Relations (3.0 cr)
- IDSC 3001 - Introduction to Information Technology in Business (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 3201 - Principles of Strategic Communication (3.0 cr)
- JOUR 3241W - Advertising Strategy and Creative Development [WI] (3.0 cr)
- JOUR 3261 - Media Planning (3.0 cr)
- JOUR 3275 - Digital Strategy in Strategic Communication (3.0 cr)
- JOUR 3745 - Mass Media and Popular Culture [AH, DJS] (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)

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 2018
• Required credits in this minor: 17

The sport management minor provides students from different disciplines the opportunity to explore interest in the sport industry, while combining their passion for sport with sport management concepts and practices.

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 must complete the application process. Please go to this website for more information:
http://www.cehd.umn.edu/kin/smgt/smgt-minor.asp.

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
Minor Coursework
Students completing the minor are required to take the courses listed below.
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)

Minor Elective Coursework
Student intending to study abroad in sport management should consult with the sport management minor advisor on available electives. Students transferring in previous sport management coursework should consult with the sport management minor advisor on transfer coursework.
SMGT 2751 - Sport and Wellness in China (3.0 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)
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 2018
- Required credits to graduate with this degree: 12
- There is a student coaching experience that takes place at selected high schools, primarily in the greater Twin Cities area.
- Degree: Coaching Certificate Ugrd

The sports coaching certificate 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 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.
Take 3 or more credit(s) from the following:
- KIN 3027 - Human Anatomy for Kinesiology Students (3.0 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 5375 - Youth Sport Science (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 2018
• 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)

Minor Requirements
Admission is open to all University students. 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 I 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 (3.0 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 5375 - Youth Sport Science (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 2018
- Required credits to graduate with this degree: 14 to 15
- Degree: Teaching English as a Second Language Certificate

Four courses are required to complete the undergraduate certificate: Teaching English as a Second 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

Required Courses for Certificate
- 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)

Other Required Courses
- CI 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)
- CI 3613 - Intercultural Communication and English Language Teaching (3.0 cr)
- CI 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 2018  
• Required credits in this minor: 14 to 15

Four courses are required to complete the undergraduate minor: Teaching English as a Second Language.

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)
University Honors Program

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 expected 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 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.

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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
**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 2018
- 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](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://admissions.umn.edu). 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**

- 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**

- STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 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)

**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 - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
or YOST 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)
or YOST 2241 - Experiential Learning (4.0 cr)
or YOST 3001 - Introduction to History & Philosophy of Youthwork (4.0 cr)
or YOST 3032 - Adolescent and Youth Development for Youthworkers (4.0 cr)
or YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
or 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:
These courses are offered at the graduate level, but are not approved for the major:
- YOST 5324, 5301, 5314, 5315, 5316, 5317, 5319, 5321, 5322, 5323, 5401, 5402.
- YOST 3031 - International Youthwork (3.0 cr)
or YOST 3234 - Youth Agencies, Organizations, and Youth Service Systems (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)

Advanced/Applied Skills
8 credits minimum, to be completed during final year of study.
- YOST 4196 - Youthwork Internship (4.0 cr)
or 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)
or YOST 4401W - Young People's Spirituality and Youthwork: An Introduction [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)
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 2018
- 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
Twin Cities Campus

Agricultural and Food Business Management B.S.

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 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 26 credits 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

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 - Honors: Principles of Macroeconomics (4.0 cr)
- or 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.

Foundation Core
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
  or AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)

Applied Economics Core
- APEC 1001 - Orientation to Applied Economics (1.0 cr)
  or CFAN 3201 - Career and Internship Preparation (1.0 cr)
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
- APEC 3501 - Agribusiness Finance (3.0 cr)
  or FINA 3001 - Finance Fundamentals (3.0 cr)
- APEC 3002 - Applied Microeconomics: Managerial Economics (4.0 cr)
  or APEC 3003 - Introduction to Applied Econometrics (4.0 cr)

CSOM Core
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
  or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  or APEC 1251 - Principles of Accounting (3.0 cr)
- SCO 3001 - Supply Chain and Operations (3.0 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)

Experiential Learning
- CFAN 3096 - Making the Most of your Internship (1.0 cr)
  or ESPM 1202 - People, Land, and Water: Systems Under Stress [HIS] (3.0 cr)
  or FSCN 2001 - Healthy Foods, Healthy Lives: A Food System Approach to Cooking (3.0 cr)
  or AIM 4011 - Student Project/Field Investigation (3.0 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 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)

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 (6-8 cr) and a minimum of two CSOM courses (6-8 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)
  or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3004 - Management Science Workshop (2.0 cr)
  or APEC 3411 - Commodity Marketing (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or 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:
  • APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
  or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
  • APEC 3004 - Management Science Workshop (2.0 cr)
  or APEC 3411 - Commodity Marketing (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or 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:
  • APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
  or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
  • APEC 3004 - Management Science Workshop (2.0 cr)
  or APEC 3411 - Commodity Marketing (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or 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:
  • APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
  or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
  • APEC 3004 - Management Science Workshop (2.0 cr)
  or APEC 3411 - Commodity Marketing (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)

Entrepreneurship and Business Management
Students must take a minimum of two APEC courses (6-8 cr) and a minimum of two CSOM courses (6-8 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)
  or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3004 - Management Science Workshop (2.0 cr)
  or APEC 3451 - Food and Agricultural Sales (3.0 cr)
  or APEC 3551 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (3.0 cr)
  or APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or 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 3058 - The Law of Contracts and Agency (4.0 cr)
  • FINA 4221 - Principles of Corporate Finance (2.0 cr)
  • HRIR 3021 - Human Resource Management and Industrial Relations (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)
  • MKTG 3040 - Buyer Behavior (4.0 cr)
  • MKTG 4200 - Insurance Theory and Practice (2.0 cr)
  • INS 3454 - Negotiation Strategies (4.0 cr)
  • MKTG 3010 - Marketing Research (4.0 cr)
  • MKTG 3040 - Buyer Behavior (4.0 cr)
  • MKTG 4100 - Corporate Risk Management (2.0 cr)
  • MKTG 4200 - Insurance Theory and Practice (2.0 cr)
  • MKTG 4305 - Managing Technologies in the Supply Chain (2.0 cr)
  • MKTG 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)

Financial Analysis and Business Management
Students must take a minimum of two APEC courses (6-8 cr) and a minimum of two CSOM courses (6-8 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)
  or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- APEC 3004 - Management Science Workshop (2.0 cr)
  or APEC 3481 - Futures and Options Markets (3.0 cr)
or APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)
or 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 3058 - The Law of Contracts and Agency (4.0 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 (6-8 cr) and a minimum of two CSOM courses (6-8 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)
or APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
    • APEC 3004 - Management Science Workshop (2.0 cr)
or APEC 3451 - Food and Agricultural Sales (3.0 cr)
    • APEC 3521 - Retail Center Management (3.0 cr)
or APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
or APEC 4501 - Financial Modeling: Spreadsheet Applications in Finance, Management, and Marketing (2.0 cr)
or 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, 3501, 4821) and 6 credits from the Carlson School. 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 2018
• 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

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 - Applied Microeconomics: Managerial Economics (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 3461 - Horticultural Marketing (3.0 cr)
or HORT 4461 - Horticultural Marketing (3.0 cr)
• APEC 3501 - Agribusiness Finance (3.0 cr)
• APEC 3551 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (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 3991 - Independent Study in Applied Economics (1.0 - 4.0 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 81
- Degree: Bachelor of Science

This major prepares students for careers in agricultural communication, journalism, 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

Quantitative Foundations
- 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)

Physical and Biological Sciences
- CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- 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)

Social Sciences
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

International
- GCC 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
  or Study Abroad Experience

Experiential Learning
- AFEE 3096 - Experiential Learning: Production and Business (1.0 - 3.0 cr)

Interdisciplinary Learning
- 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)
Writing Requirement
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Major Courses
AFEE 1001 - Introduction to Agricultural Education, Communication & Marketing (1.0 cr)
AFEE 2096 - Career Exploration & Early Field Experience in Agricultural Education, Communication, and Marketing (2.0 cr)

Communication and Journalism
AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)
AFEE 3430 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)
AFEE 4450W - Advanced Agricultural Journalism and Persuasive Writing for Ag, Food & Environmental Sciences [WI] (3.0 cr)
JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
or COMM 3422 - Interviewing and Communication (3.0 cr)
or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
or WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)

Business Management and Marketing
AFEE 2221W - Foundations of Leadership Practice [WI] (3.0 cr)
APEC 1251 - Principles of Accounting (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
or APEC 3451 - Food and Agricultural Sales (3.0 cr)
or MKTG 4030 - Sales Management (4.0 cr)
APEC 3411 - Commodity Marketing (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
or MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
or APEC 3551 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (3.0 cr)
or APEC 3811 - Principles of Farm Management (3.0 cr)
or APEC 3841 - Agricultural Cooperatives and Mutuals (3.0 cr)
or APEC 4451W - Food Marketing Economics [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:
• AFEE 4450W - Advanced Agricultural Journalism and Persuasive Writing for Ag, Food & Environmental Sciences [WI] (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• AFEE 5111W - Agricultural Education: Methods of Teaching [WI] (4.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)

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 20 credits in their area of emphasis.

Animal Science
ANSC 1101 - Introductory Animal Science (4.0 cr)

Natural Resources
CFAN 3513 - The Natural History of Norway [GP, ENV] (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 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)

Plant Science
AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
or CFAN 3001 - Pests and Crop Protection (3.0 cr)
or ENT 4015 - Ornamentals and Turf Entomology (3.0 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 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)

Soil Science
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Technology
AFEE 2051 - Current Technical Competencies (3.0 cr)
or UC 3201 - Web Designer Introduction (4.0 cr)
or ARTS 1701 - Introduction to Photography [AH] (4.0 cr)
or COMM 3201 - Introduction to Electronic Media Production (4.0 cr)

Food and Nutrition
FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (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 ANSC 1511 - Food Animal Products for Consumers (3.0 cr)

B: Crops and Soils
Students must complete at least 21 credits in their area of emphasis.

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)
ANSC 3011 - Statistics for Animal Science (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)
or SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 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)
CFAN 3001 - Pests and Crop Protection (3.0 cr)
or ENT 4015 - Ornamentals and Turf Entomology (3.0 cr)

C: Food Industries
Students must complete at least 20 credits in their area of emphasis.

Food Industries
FSCN 1011 - Science of Food and Cooking [PHYS] (4.0 cr)
FSCN 1112 - Principles of Nutrition [TS] (3.0 cr)
FSCN 2021 - Introductory Microbiology (4.0 cr)
FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
FSCN 4131 - Food Quality (3.0 cr)
FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
or ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
Twin Cities Campus

Agricultural Education B.S.

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 92 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 stressed 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; educational and training specialists for agribusinesses, commodity organizations, governmental agencies, 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.

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

Physical and Biological Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1015</td>
<td>Introductory Chemistry: Lecture [PHYS] (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>CHEM 1017</td>
<td>Introductory Chemistry: Laboratory [PHYS] (1.0 cr)</td>
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</tr>
<tr>
<td>AGRO 1101</td>
<td>Biology of Plant Food Systems [BIOL] (4.0 cr)</td>
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</tr>
<tr>
<td>or BIOL 1009</td>
<td>General Biology [BIOL] (4.0 cr)</td>
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</tbody>
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Information current as of August 24, 2018
Mathematics
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)

Major Courses
AFEE 1001 - Introduction to Agricultural Education, Communication & Marketing (1.0 cr)
AFEE 2051 - Current Technical Competencies (3.0 cr)
AFEE 2096 - Career Exploration & Early Field Experience in Agricultural Education, Communication, and Marketing (2.0 cr)
AFEE 5111W - Agricultural Education: Methods of Teaching [WI] (4.0 cr)

Interdisciplinary Learning
CFAN 1501 - Biotechnology, People, and the Environment [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:
- AFEE 5111W - Agricultural Education: Methods of Teaching [WI] (4.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Social Sciences
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

Communication
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Animal Science
ANSC 1101 - Introductory Animal Science (4.0 cr)
Take 1 or more course(s) from the following:
- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
- ANSC 2401 - Animal Nutrition (3.0 cr)
- ANSC 3221 - Animal Breeding (4.0 cr)

Applied Economics and Agribusiness
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
Take 1 or more course(s) from the following:
- APEC 1251 - Principles of Accounting (3.0 cr)
- APEC 3411 - Commodity Marketing (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- APEC 3821 - Retail Center Management (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)

Food Science
ANSC 1511 - Food Animal Products for Consumers (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:
- CFAN 3513 - The Natural History of Norway [GP, ENV] (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
CFAN 3001 - Pests and Crop Protection (3.0 cr)
or ENT 4015 - Ornamentals and Turf Entomology (3.0 cr)
Take 3 or more credit(s) from the following:
- AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
• HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
• HORT 1003 - Organic Gardening: From Balconies to Backyards (3.0 cr)
• HORT 1013 - Floral Design (3.0 cr)

Soil Science
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Technology
AFEE 3112 - Building Construction Technology (3.0 cr)

Education
CI 5452 - Reading in the Content Areas for Initial Licensure Candidates (1.0 - 2.0 cr)
CI 5307 - Technology for Teaching and Learning (1.5 cr)
PUBH 3005 - Fundamentals of Alcohol and Drug Abuse for Teacher Education (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)
OLPD 5005 - School and Society (2.0 cr)
OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
CI 4602 - English Learners and Academic Language (1.0 cr)
EPSY 4001 - Teaching Students with Special Needs in Inclusive Settings (1.0 cr)

Agricultural Education
AFEE 5112 - Agricultural Education Program Organization and Curriculum for Youth (3.0 cr)
AFEE 5114 - Agricultural Education Teaching Seminar (1.0 cr)
AFEE 5116 - Coordination of SAE Programs: Work-based Learning (2.0 cr)
AFEE 5118 - Strategies for Managing and Advising the FFA Organization (2.0 cr)
AFEE 5697 - Teaching Internship: School and Classroom Setting (2.0 cr)

Public Speaking
AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)

Experiential Learning
AFEE 5698 - Teaching Internship (2.0 - 8.0 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 2018
- 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 2501 - Plant Identification for Urban and Rural Landscapes (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 4015 - Topics in Agronomy (1.0 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 3001 - Pests and Crop Protection (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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 67 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

Foundation Courses
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 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)

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
- ANSC 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)

Experiential Learning
Students must take a minimum of 3 credits 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:
• APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
• CFAN 1501 - Biotechnology, People, and the Environment [TS] (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)
• HORT 4850 - Pollinator Protection in Managed Landscapes (3.0 cr)
• HORT 4855 - Aquaculture, 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 3006 - (Inactive) [ENV] (3.0 cr)
• GCC 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (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 3010 - Grand Challenge: The Global Climate Challenge Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 5010 - Grand Challenge: 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 3017 - World Food Problems: Agronomics, Economics and Hunger [GP] (3.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• GCC 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (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 3010 - Grand Challenge: The Global Climate Challenge Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 5010 - Grand Challenge: 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)
• 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 3010 - Grand Challenge: The Global Climate Challenge Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 5010 - Grand Challenge: 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 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (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 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (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 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (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)

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)

Take 12 or more credit(s) from the following:
• ANSC 3801 - Livestock Merchandising (3.0 cr)
• APEC 1102 - Principles of Macroeconomics (3.0 cr)
• APEC 1251 - Principles of Accounting (3.0 cr)
• APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
• APEC 3002 - Applied Microeconomics: 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)
• JOUR 1001 - Media in a Changing World [SOCS, TS] (3.0 cr)
• JOUR 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 credit(s) from the following:

• AFEE 2051 - Current Technical Competencies (3.0 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 (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)
• CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
• ENT 3281 - Veterinary Entomology (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)
• 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)
  • Midwest Poultry Consortium Summer Courses - Madison, WI
• Any CFANS Major Study/Learning Abroad Course

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:
- AFEE 2051 - Current Technical Competencies (3.0 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 (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)
- ENT 3281 - Veterinary Entomology (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)
BIOL 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)
• 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:

• AFEE 2051 - Current Technical Competencies (3.0 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 (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)
• ENT 3281 - Veterinary Entomology (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
• 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:
• APEC 2051 - Current Technical Competencies (3.0 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 (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)
• ENT 3281 - Veterinary Entomology (3.0 cr)
• FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (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)

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 II Laboratory (1.0 cr)
CHEM 2085 - Chemistry for the Life Sciences II 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)
  or FSCN 2021 - Introductory Microbiology (4.0 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:
• AFEE 2051 - Current Technical Competencies (3.0 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 (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 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
• CFAN 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (3.0 cr)
• ENT 3281 - Veterinary Entomology (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 2018
- 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

Students must complete at least 20 credits of courses with an animal science (ANSC) designator.

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
• ANSC 3xxx
• ANSC 4xxx
• ANSC 5xxx

• Take 10 or more credit(s) from the following:
• 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 5700 - Cell Physiology (4.0 cr)
  or PHSL 4700 - Cell Physiology (3.0 cr)
Twin Cities Campus

Applied Economics B.S.

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 53 to 56
- 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 majoring in agricultural and food business management and applied economics cannot minor in either of the 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.

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

Foundations Core
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
- or AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)
COMM 5441 - Communication in Human Organizations (3.0 cr)
- or COMM 3422 - Interviewing and Communication (3.0 cr)
- or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- or WRIT 3441 - Editing, Critique, and Style (3.0 cr)
- or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
- or AFEE 3430 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)

Students considering graduate study in applied economics are encouraged to take MATH 1271 and MATH 1272.
MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)

Professional Courses
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 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)

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Information current as of August 24, 2018
APEC 1102 - Principles of Macroeconomics (3.0 cr)
  or APEC 1102H - Honors: Principles of Macroeconomics (4.0 cr)
  or ECON 1102 - Principles of Macroeconomics (4.0 cr)
APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
APEC 3002 - Applied Microeconomics: Managerial Economics (4.0 cr)
  or APEC 3003 - Introduction to Applied Econometrics (4.0 cr)
APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
  or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Experiential Learning
  AIM 4011 - Student Project/Field Investigation (3.0 cr)
  or CFAN 3096 - Making the Most of your Internship (1.0 cr)
  or ESPM 1202 - People, Land, and Water: Systems Under Stress [HIS] (3.0 cr)
  or FSCN 2001 - Healthy Foods, Healthy Lives: A Food System Approach to Cooking (3.0 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 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)

Professional Application Cluster
  Take 12 or more credit(s) from the following:
  • APEC 3xxx
  • APEC 4xxx
  • APEC 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:
  • 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)
Twin Cities Campus

Applied Economics Minor

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- 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 the major and the applied economics minor. Students must have an overall minimum GPA of 2.00 for the minor program coursework.

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 - Honors: Principles of Macroeconomics (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 - Applied Microeconomics: Managerial Economics (4.0 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 3991 - Independent 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 5651 - Economics of Natural Resource and Environmental Policy (3.0 cr)
  • APEC 5711 - U.S. 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 2018
• 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 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 (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 2018
- 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 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] (4.0 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)
- ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
or ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (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 2018
• 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
AGCT 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
Entomology Minor
Entomology
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 16

This minor provides a strong background in entomological principles and theory suitable for students interested in a variety of professions or advanced degree programs. Examples include programs in entomology, veterinary science, or public health; teaching biology in secondary educational institutions; or enhancing marketable skills for a variety of professional careers, such as forest health specialist, crop consultant, grounds manager, pest management specialist, agronomist, greenhouse or nursery technician, natural resource manager, or water quality specialist. Specific courses are selected based on students’ educational objectives, in consultation with a minor advisor.

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 [BIOL] (4.0 cr)

Electives
Take 12 or more credit(s) from the following:
- CFAN 3001 - Pests and Crop Protection (3.0 cr)
- ENT 3281 - Veterinary Entomology (3.0 cr)
- ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
- ENT 4015 - Ornamentals and Turf Entomology (3.0 cr)
- ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
- ENT 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
- ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
- ENT 5011 - Insect Structure and Function (4.0 cr)
- ENT 5021 - Insect Biodiversity and Evolution (4.0 cr)
- ENT 5041 - Insect Ecology (3.0 cr)
- ENT 5051 - Scientific Illustration of Insects (3.0 cr)
- ENT 5121 - Applied Experimental Design (4.0 cr)
- ENT 5275 - Medical Entomology (3.0 cr)
- ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
- ENT 5361 - Aquatic Insects (4.0 cr)
- ENT 5900 - Basic Entomology (1.0 - 6.0 cr)
- ENT 5910 - Special Problems in Entomology (1.0 - 6.0 cr)
- ENT 5920 - Special Lectures in Entomology (1.0 - 4.0 cr)
- ENT 5925 - Field Methods in Insect Taxonomy (1.0 cr)
- ENT 5981 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
- ENT 2920 - Introductory Lectures in Entomology (1.0 - 4.0 cr)
- ENT 3910 - Introduction to Research in Entomology (1.0 - 6.0 cr)
- ENT 1021 - An Introduction to Forensic Entomology (3.0 cr)
Twin Cities Campus
Environmental Sciences, Policy and Management B.S.
College of Food, Agric & Natural Resource Sciences
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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); and 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.

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)
ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
  or ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)

Communication Skills
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)

**Biological Sciences**
- CRM track: BIOL 1009 is required when taking BIOC 2101
- BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
  - or BIOL 1009 - General Biology [BIOL] (4.0 cr)

**Experiential Learning**
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)

**Interdisciplinary Learning**
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)

**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)

**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)
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
  - or ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
- FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
  - or FNRM 3104 - Forest Ecology (4.0 cr)

**Additional Soils**
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

**Additional Physical Science**
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
  - or CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  - or CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  - or CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)

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Information current as of August 24, 2018
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
  or SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
  or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
BIOC 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)

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)
  • FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)

Social Sciences
Social Systems
  • 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 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
  • ESPM 3602 - Regulations and Corporate Environmental Management (3.0 cr)
  • ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
  • ESPM 4242 - Methods for Environmental and Natural Resource Policy Analysis (3.0 cr)

Economics
  • ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
  • APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  • ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)

Policy
  • ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (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 2101 - Identifying Forest Plants (1.0 cr)
    with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
    with 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)
  • CFAN 3096 - Making the Most of your Internship (1.0 cr)

CRM Contract Courses
Course selections from contract area must be made through a faculty mentor. A contract is required. Courses cannot be used as a contract course if already satisfying CRM core coursework
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 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)
  • BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
• ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
• FNRM 3104 - Forest Ecology (4.0 cr)
• FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
• FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
• FNRM 5153 - Forest Hydrology & Watershed Biogeochemistry (3.0 cr)
• FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
• FW 4103 - Principles of Wildlife Management (3.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
• SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)

• Ecological Restoration
  - ESPM 5071 - Ecological Restoration (4.0 cr)
  or HORT 5071 - Ecological Restoration (4.0 cr)
• Wetland Soils
  - SOIL 5555 - Wetland Soils (3.0 cr)
  or ESPM 5555 - Wetland Soils (3.0 cr)
• 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 3006 - [inactive][ENV] (3.0 cr)
  - GCC 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [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)
• ESPM 4811 - Environmental Interpretation (3.0 cr)
• AFEE 3430 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (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)
• 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 3441 - 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 3102W - Public Writing [CIV, WI] (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:
• ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
• ESPM 3920W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
• GEOG 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)
or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
  or 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 PHYS 1001W - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)
or SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
Organisal Biology
Take 3 or more course(s) including exactly 2 sub-requirements(s) from the following:
Plant
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 [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**

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 Internship (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)
  - with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
- or 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 ecologists, 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)
- 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)
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or CFAN 3096 - Making the Most of your Internship (1.0 cr)
Take 2 or more credit(s) from the following:
• SOIL 3521 - Soil Judging (1.0 cr)
• SOIL 4511 - Field Study of Soils (2.0 cr)
• 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)
• FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)
• with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
• with FNRM 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 3515 - 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 5402 - Biometeorology (3.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• FNRM 5153 - Forest Hydrology & Watershed Biogeochemistry (3.0 cr)
• FW 5604W - Fisheries Ecology and Management [WI] (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)
• 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)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• EEB 4611 - Biogeochemical Processes (3.0 cr)
• FNRM 3104 - Forest Ecology (4.0 cr)
• FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
• FNRM 3204 - Landscape Ecology and Management (3.0 cr)
• FNRM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
• HORT 5071 - Ecological Restoration (4.0 cr)
• ENGL 3501 - Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• HIST 3417 - Food in History [HIS, ENV] (3.0 cr)
• LA 3204 - Holistic Landscape Ecology and Bioregional Practice (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:
  - ESPM 5402 - Biometeorology (3.0 cr)
  - ESPM 4093 - Directed Study (1.0 - 7.0 cr)
  - EEB 3402 - Climate Change and Human History [ENV] (3.0 cr)
  - GEOG 5426 - Climatic Variations (3.0 cr)
  - GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 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)
  - PUBH 6191 - Air Pollution (3.0 cr)
  - ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
or ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (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 3602 - Environmental Life Cycle Analysis (3.0 cr)
  - ESPM 4216 - Contaminant Hydrology (3.0 cr)
  - ESPM 4285W - 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 5412 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
  - GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
  - GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  - GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
  - GIS 5571 - ArcGIS I (3.0 cr)
  - PUBH 6132 - 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 3006 (inactive) - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
  - GCC 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (3.0 cr)
  - GCC 3010 - Grand Challenge: 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 5010 - Grand Challenge: 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)

**Chemistry Principles**
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 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)
ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)

**Field Session Options**
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
ESPM 3206 - Park and Protected Area Management Field Studies (2.0 cr)

**Methods**
Choose one course from the following.
ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
ESPM 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
ESPM 3001W - Introduction to Research Methods [WI] (4.0 cr)
ESPM 5259 - Visitor Behavior Analysis (3.0 cr)

**Ecology and Management**
Choose 3 credits from the following.
ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
ESPM 3575 - Wetlands (3.0 cr)
ESPM 3104 - Forest Ecology (4.0 cr)
ESPM 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)

Choose 6-8 credits from the following.
BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
ESPM 3101 - Park and Protected Area Tourism (3.0 cr)
ESPM 3114 - Hydrology and Watershed Management (3.0 cr)
ESPM 4232W - Managing Recreational Lands [WI] (4.0 cr)
GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
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 2018
- 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

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
See your minor advisor for a list of these courses arranged by the following themes: environmental education and communication; environmental management and policy; and environmental and biological sciences. Students may but are not required to take all 10 credits in one thematic area.

NOTE: at least two courses MUST have an ESPM designator.
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 3101 (Inactive) (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 3375 - 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)
- BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
- BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
- CI 5537 - Principles of Environmental Education (3.0 cr)
- CI 5747 - Global and Environmental Education: Content and Practice (3.0 cr)
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- EEB 4611 - Biogeochemical Processes (3.0 cr)
- ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
- FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
- FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
- FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
- FNRM 3204 - Landscape Ecology and Management (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 3411 - Managing Forest Ecosystems: Silviculture (3.0 cr)
- FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
- FW 5604W - Fisheries Ecology and Management [WI] (3.0 cr)
- HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- PHIL 3301 - Environmental Ethics [ENV] (4.0 cr)
- REC 4301 - Wilderness and Adventure Education (4.0 cr)
- SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
- WRS 5241 - Ecological Risk Assessment (3.0 cr)
- GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- SOIL 5555 - Wetland Soils (3.0 cr)
  or ESPM 5555 - Wetland Soils (3.0 cr)
- ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
  or HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)

- Climate
  - 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)
Twin Cities Campus
Fisheries, Wildlife, and Conservation Biology B.S.
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 74 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
After completing a core curriculum that includes liberal education, communications, basic science, mathematics, and an orientation to the fields of fisheries, wildlife, and conservation biology, students complete additional credits in one of three areas of specialization: fisheries and aquatic sciences, wildlife, or conservation biology. Some of the core curriculum courses also fulfill diversified core and designated theme requirements. Electives to complete the required 120 credits are chosen in consultation with a program advisor.

Students may also 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.

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.

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

Fisheries, Wildlife, and Conservation Biology Courses
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 3106 - 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)

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 Internship (1.0 cr)

Interdisciplinary Learning
Take 0 - 1 course(s) from the following:
• FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)

Experiential Learning
Take 0 - 1 course(s) from the following:
• CFAN 3096 - Making the Most of your Internship (1.0 cr)
• ESPM 4096 - Professional Experience Program: Internship (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 [SOC, 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)
• FW 5604W - Fisheries Ecology and Management [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:
• AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (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 3010 - Grand Challenge: The Global Climate Challenge Creating an Empowered Movement for Change [CIV] (3.0 cr)
  or GCC 5010 - Grand Challenge: 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)
  or FW 5601 - Fisheries Population Analysis (3.0 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 (4.0 cr)
- FW 4103 - Principles of Wildlife Management (3.0 cr)
- FW 5604W - Fisheries Ecology and Management [WI] (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)
• 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)
• 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)
• FW 5604W - Fisheries Ecology and Management [WI] (3.0 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)

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:
• AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (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 5469 - Stream and River Ecology (3.0 cr)
• FW 5601 - Fisheries Population Analysis (3.0 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
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)
• HORT 4601 - Aquaponics: Integrated fish and plant food systems (4.0 cr)
• VPM 3102 - Aquatic-Sediment Ecological Toxicology (3.0 cr)
• ESPM 3015 - Invasive Plants and Animals (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. Recommended for students interested in a graduate degree or planning a career focused on research.

PHYS
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
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)
or 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)
Take 1 or more course(s) from the following:
• 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:
• AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (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)
  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)
  or PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
  or PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
  or PHYS 1202W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  or 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)
  or 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)
Twin Cities Campus
Fisheries, Wildlife, and Conservation Biology Minor
Fisheries, Wildlife, and Conservation Biology
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 16 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
Ecology
- FNRM 3104 - Forest Ecology (4.0 cr)
- or EEB 3407 - Ecology (3.0 cr)
- or EEB 3408W - Ecology [WI] (4.0 cr)

Principles of Fisheries, Wildlife and Conservation Biology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
- FW 2003 - Introduction to Marine Biology (3.0 cr)
- FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
- FW 4103 - Principles of Wildlife Management (3.0 cr)

Human Dimensions
Note: may not take both 3000 & 5000 versions of the same class.
Take 1 or more course(s) totaling 3 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 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
- ESPM 5271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
- FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)

Taxonomy
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- FW 4101 - Herpetology (4.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
- EEB 4134 - Introduction to Ornithology (4.0 cr)
- FW 4136 - Ichthyology (4.0 cr)
- EEB 4839 - Field Studies in Mammalogy (4.0 cr)
- EEB 4844 - Field Ornithology (4.0 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 4401 - Fish Physiology and Behavior (3.0 cr)
- FW 5051 - Analysis of Populations (4.0 cr)
- FW 5601 - Fisheries Population Analysis (3.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- FW 5604W - Fisheries Ecology and Management [WI] (3.0 cr)
- ESPM 5071 - Ecological Restoration (4.0 cr)
• ESPM 5245 - Sustainable Land Use Planning and Policy (3.0 cr)
• FW 5003 - Human Dimensions of Biological Conservation (3.0 cr)
Twin Cities Campus
Food Science B.S.
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 to 85
- 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 food borne 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.

Foundation Courses
Students must take either MATH 1142 or MATH 1271 & MATH 1272, as well as BIOC 3021 or BIOC 4331 & BIOC 4332.

- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II [MATH] (4.0 cr)
- PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
- 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)
- 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)
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 4311 - Chemical Reactions in Food Systems (2.0 cr)
FSCN 4112 - Food Chemistry and Functional Foods (3.0 cr)
FSCN 4481 - Sensory Evaluation of Food Quality (1.0 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 AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (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
BBE 4744 - Engineering Principles for Biological Scientists (4.0 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 4481 - Sensory Evaluation of Food Quality (1.0 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 2018
- Required credits in this minor: 31 to 34

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](https://admissions.umn.edu).

**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)
- **FSCN 4332** - Food Processing Operations (3.0 cr)
  
  *or BBE 4744 - Engineering Principles for Biological Scientists (4.0 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 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, Food Science & Nutrition, Horticultural Science
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 70 to 71
- This program requires summer terms.
- none
- 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 with foods 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

Integrated Food Systems Core 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)
- FDSY 4101 - Holistic Approaches to Improving Food Systems Sustainability (3.0 cr)
- CFAN 3096 - Making the Most of your Internship (1.0 cr)
  or HORT 4096W - Professional Experience Program: Internship [WI] (2.0 cr)
- AGRO 1660W - First-Year Colloquium/Experience in Agroecosystems Analysis [WI] (2.0 cr)
or 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)
APEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [GIV] (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
Either of the internship courses, CFAN 3096 or HORT 4096W, 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)
• CFAN 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)

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Information current as of August 24, 2018
• 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)

**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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT 1001</td>
<td>Plant Propagation [BIOL]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or</td>
<td>BIOL 1009</td>
<td>General Biology [BIOL] 4.0 cr</td>
</tr>
</tbody>
</table>

**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 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (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 - Healthy Foods, Healthy Lives: A Food System Approach to Cooking (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)
- APEC 2050 - Introduction to Financial Reporting (4.0 cr)
- HORT 4461 - Horticultural Marketing (3.0 cr)
- HORT 4461 - Horticultural Marketing (3.0 cr)

**Cross-Listed Track Electives 2**

- APEC 1102 - Principles of Macroeconomics (3.0 cr)
- or ECON 1102 - Principles of Macroeconomics (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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS 5103</td>
<td>Integration of Sustainable Agriculture Concepts (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>HORT 2100</td>
<td>Agricultural Biochemistry (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>PLSC 3005W</td>
<td>Introduction to Plant Physiology [WI] (4.0 cr)</td>
<td></td>
</tr>
<tr>
<td>CFAN 2333</td>
<td>Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>HORT 3131</td>
<td>Student Organic Farm Planning, Growing, and Marketing (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>HORT 1001</td>
<td>Plant Propagation [BIOL] (4.0 cr)</td>
<td></td>
</tr>
<tr>
<td>SOIL 2125</td>
<td>Basic Soil Science [PHYS, ENV] (4.0 cr)</td>
<td></td>
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</tbody>
</table>

**Track Electives**

Take 10 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 4071W - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
- HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
- HORT 4601 - Aquaponics: Integrated fish and plant food systems (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 4110 - Spring Flowering Bulbs (1.0 cr)
• HORT 4111 - Prairie Perennials and Grasses (1.0 cr)
• HORT 4112 - Flowering Trees and Shrubs (1.0 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)
• HORT 4461 - Horticultural Marketing (3.0 cr)
  or APEC 4461 - Horticultural Marketing (3.0 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
Agromony & Plant Genetics, Animal Science, Entomology, Food Science & Nutrition, 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 2018
• 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)

Minor Requirements

Minor Core
Students must complete the following three courses:
FD SY 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 BI OC 3021 - 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 Mutu als (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 - Healthy Foods, Healthy Lives: A Food System Approach to Cooking (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 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (3.0 cr)
• APEC 3811 - Principles of Farm Management (3.0 cr)
Organics and Local Food Production Track

Take 9 or more credit(s) from the following:

- **APS 5103** - Integration of Sustainable Agriculture Concepts (3.0 cr)
- **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.
Forest Resources
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 91
- 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. Students should choose one of these tracks early in their college careers. 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
Communication Skills
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (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)

Professional Courses
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.

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 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
or FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
or HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
or 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, timber harvesting, 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 3262 - 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)
or PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
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)
Field Training in the Biology and Assessment of Forests
Courses are taught at the Cloquet Forestry Center
FNRM 2101 - Identifying Forest Plants (1.0 cr)
with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
with FNRM 2104 - Measuring Forest Resources (1.0 cr)

Advanced Field Training in the Assessment and Management of Forests
Courses are taught at the Cloquet Forestry Center
A minimum of 2 courses required:
Take 2 - 3 course(s) from the following:
- FNRM 4511 - Field Silviculture (2.0 cr)
- FNRM 4515 - Field Remote Sensing and Resource Survey (2.0 cr)
- FNRM 4521 - Field Timber Harvesting and Road Planning (2.0 cr)

Experiential Learning
FNRM 4232W Managing Recreational Lands [WI] (4.0 cr),
FNRM 2102 Northern Forest Field Ecology (2.0 cr), or one course approved by the major coordinator.

Interdisciplinary Learning
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 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
or CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (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 3006 [Inactive][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 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (3.0 cr)
or GCC 3010 - Grand Challenge: The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 3013 - Making Sense of Climate Change - Science, Art, and Agency [CIV] (3.0 cr)
or GCC 3013 - 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 HORT 4850 - Pollinator Protection in Managed Landscapes (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 resources-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 - 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 3203W - 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
Requirement ranging from 1-4 credits
CFAN 3096 - Making the Most of your Internship (1.0 cr)
or FNRM 3206 - Park and Protected Area Management Field Studies (2.0 cr)
or Introductory Cloquet Field Session
FNRM 2101 - Identifying Forest Plants (1.0 cr)
with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
with FNRM 2104 - Measuring Forest Resources (1.0 cr)

Experiential Learning
FNRM 4232W Managing Recreational Lands [WI] (4.0 cr) or one course approved by the major coordinator.

Interdisciplinary Learning
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 CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
or CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (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 3006 [Inactive] [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 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (3.0 cr)
or GCC 3010 - Grand Challenge: The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (3.0 cr)
or GCC 5010 - Grand Challenge: The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (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 HORT 4850 - Pollinator Protection in Managed Landscapes (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 specializations, 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/arboricultural
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)
- or URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)

**Field Training in the Biology and Assessment of Forests**
Courses are taught at the Cloquet Forestry Center
- FNRM 2101 - Identifying Forest Plants (1.0 cr)
- with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
- with FNRM 2104 - Measuring Forest Resources (1.0 cr)

**Experiential Learning**
- FNRM 4232W Managing Recreational Lands [WI] (4.0 cr),
- FNRM 2102 (2.0 cr) Northern Forests Field Ecology, or one course approved by the major coordinator.

**Interdisciplinary Learning**
- 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 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
- or CFAN 2333 - Insects, Microbes, and Plants: Ecology of Pest Management [TS] (3.0 cr)
- or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (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 5006 [Inactive] [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 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (3.0 cr)
- or GCC 3010 - Grand Challenge: The Global Climate Challenge Creating an Empowered Movement for Change [CIV] (3.0 cr)
- or GCC 5010 - Grand Challenge: The Global Climate Challenge: Creating an Empowered Movement for Change [CIV] (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 HORT 4850 - Pollinator Protection in Managed Landscapes (3.0 cr)

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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)
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 2018
- 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
The sequence of courses in the Introductory Field Session at the Cloquet Forestry Center may be used either to meet the minor courses requirement or as an elective, but they cannot be used to satisfy both 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)
or FNRM 2101 - Identifying Forest Plants (1.0 cr)
with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
with FNRM 2104 - Measuring Forest Resources (1.0 cr)

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 2018
- 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 6 minor credits must be completed at the University of Minnesota Twin Cities.

Minor Course
HORT 1001 - Plant Propagation [BIOL] (4.0 cr)

Electives
Take a minimum of 14 credits. At least two HORT courses must be at the 4xxx or 5xxx level. A maximum of 3 credits of HORT 3090 Directed Studies may be applied.

Take at most 14 credit(s) from the following:
- HORT 1xxx
- HORT 2xxx
- HORT 3xxx
- HORT 3090 - Directed Studies (1.0 - 3.0 cr)
- HORT 4xxx
- HORT 5xxx

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

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• SOIL 2xxx
• SOIL 3xxx
• SOIL 4xxx
• SOIL 5xxx
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 2018
• 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:

A general overview of international agriculture (3 cr)
Culture or language studies (3 cr)
Expanded coursework in agriculture (9 cr)
An academic, international experience where students are required to travel outside the United States for a minimum two-weeks. (3 cr)

A students program must be developed in coordination with the minor coordinator with assistance from CFANS International Programs. Students must complete 17 credits with a minimum GPA of 2.00.

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 3000 - 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 - Vertebrate Research Design and Field Survey Techniques [GP] (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:
  - AFEE 5361 *(Inactive)* (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 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 2018
• 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

CFANS Freshman Seminar
In order to have some introductory knowledge of Native American culture, students must take two introductory courses with significant Native American cultural knowledge. CFANS offers two CFAN 1902 freshman seminars "Ways of Knowing and Science" in the fall and CFAN 1911 "Native American Environmental Knowledge" in spring. Students may choose to take both freshman seminars or one freshman seminar and another American Indian studies course.

CFAN 1902 - Ways of Knowing and Science [DSJ] (3.0 cr)
or CFAN 1911 - Native American Ways of Knowing the Environment [DSJ] (3.0 cr)

Introduction to Cultural Systems

CFAN 1902 - Ways of Knowing and Science [DSJ] (3.0 cr)
or CFAN 1911 - Native American Ways of Knowing the Environment [DSJ] (3.0 cr)
or AMIN 1001 - American Indian Peoples in the United States [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
• POL 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or 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 POL 452SW - Federal Indian Policy [WI] (3.0 cr)

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or AMIN 4525W - Federal Indian 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)
  or 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)
•ANTH 3601 - 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)

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 4293 - Directed Study (1.0 - 5.0 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 74 to 96
- 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
Foundation Courses
- BIOC 3021 - Biochemistry (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
  or AFEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)
- BIOL 1009 - General Biology [BIOL] (4.0 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 3102 - Introduction to Food Science (3.0 cr)
- FSCN 3612 - Life Cycle Nutrition (3.0 cr)
- FSCN 4612 - Advanced Human Nutrition (4.0 cr)
- FSCN 4613 - Experimental Nutrition (2.0 cr)
- FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)

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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.
CFAN 3096 - Making the Most of your Internship (1.0 cr)
or FSCN 2001 - Healthy Foods, Healthy Lives: A Food System Approach to Cooking (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:
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• FSCN 4614W - Community Nutrition [SOCS, DSJ, WI] (3.0 cr)
• FSCN 4621 - Nutrition and Metabolism (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 - Senior Seminar for the Didactic Program in Dietetics (2.0 cr)
FSCN 4732 - Food and Nutrition Management (3.0 cr)
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
Students must select one 4xxx or above FSCN or NUTR course of at least 3 credits. Students cannot select a course that is already required for the program.

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 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)

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)
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 2018
- 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 4612 - Advanced Human Nutrition (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 2018
- 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)

Park and Protected Area Management 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
FNRM 3201 - Introduction to Travel and Tourism (3.0 cr)
Take 1 or more course(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)
APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
GEOG 3398 - Going Places: Geographies of Travel and Tourism [CIV] (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 - Vertebrate Research Design and Field Survey Techniques [GP] (3.0 cr)
CFAN 3506 - Iceland: Landscapes, Natural Resources, and Environmental Management (3.0 cr)
CFAN 3507 - Exploring Ecuador: People, Land, and Water from the Amazon to the Galapagos [ENV, GP] (3.0 cr)
CFAN 3510 - From Rainforest to Reef: Wildlife Medicine and Conservation in Belize (3.0 cr)
CFAN 3512 - Sustainable Food Chains [GP] (3.0 cr)
CFAN 3513 - The Natural History of Norway [GP, ENV] (3.0 cr)
CFAN 3514 - Machu Picchu: Biodiversity & Climate Change in Peru [ENV] (3.0 cr)
CFAN 3516 - Sustainable Food Systems of Italy [ENV, GP] (3.0 cr)
CFAN 3518 - Environmental Issues in New Zealand [GP] (3.0 cr)
CFAN 3519 - Bali: Water and Culture from Rainforests to Reefs [ENV, GP] (3.0 cr)
ANTH 3980 - Topics in Anthropology (3.0 cr)
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 2018
- 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**

**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)
- FDSY 2101 - Plant Production Systems (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**
- 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)

**Plant Breeding**
- PLSC 3401 - Plant Genetics and Breeding (4.0 cr)

**Plant Physiology**
- PLSC 3005W - Introduction to Plant Physiology [WI] (4.0 cr)

**Biology 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)

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Information current as of August 24, 2018
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 4097W - Undergraduate Research Thesis [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 CFAN 1501 - Biotechnology, People, and the Environment [TS] (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 HORT 4850 - Pollinator Protection in Managed Landscapes (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)

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)

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:

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 or PlPa 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)

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 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 3003 - 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)
• PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
or ESPM 3612W - Soil and Environmental Biology [WI] (4.0 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 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)
• HORT 1014 - Edible Landscape [TS] (3.0 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)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
or ESPM 3612W - Soil and Environmental Biology [WI] (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 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 1013 - 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)
- PLPA 2001 - Introductory Plant Pathology (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)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
- or ESPM 3612W - Soil and Environmental Biology [WI] (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 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)
- ENT 4015 - Ornamentals and Turf Entomolgy (3.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
- HORT 4850 - Pollinator Protection in Managed Landscapes (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)

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 or PlPa designators.

Sustainable Plant Health
Take 24 or more credit(s) from the following:
- ENT 1005 - Insect Biology [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)
- HORT 4850 - Pollinator Protection in Managed Landscapes (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)
- HORT 4251 - Forest and Shade Tree Entomology (3.0 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)

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 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 4015 - Topics in Agronomy (1.0 cr)
- AGRO 4093 - Directed Studies for Advanced Students (1.0 - 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)
- CFAN 3001 - Pests and Crop Protection (3.0 cr)
- ENT 1005 - Insect Biology [BIOL] (4.0 cr)
- PLPA 2001 - Introductory Plant Pathology (3.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
- SOIL 4111 - Introduction to Precision Agriculture (3.0 cr)
- HORT 4141W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
- AGRO 2022 - Growth and Development of Minnesota Field Crops (1.0 cr)
- HORT 1014 - Edible Landscape [TS] (3.0 cr)
- PLSC 3002 - Seed Science, Technology, and Society (2.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- AGRO 2501 - Plant Identification for Urban and Rural Landscapes (1.0 cr)
- AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
- SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
  or ESPM 3612W - Soil and Environmental Biology [WI] (4.0 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 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)

Course Group 1
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 (2.0 cr)
- HORT 5059 - Plant Cytogenetics Lab (1.0 cr)
- PLPA 2001 - Introductory Plant Pathology (3.0 cr)
- PLPA 5301 - Large Scale Omic Data in Plant Biology (3.0 cr)

Directed Studies
- AGRO 4093 - Directed Studies for Advanced Students (1.0 - 4.0 cr)
  or HORT 3090 - Directed Studies (1.0 - 3.0 cr)
  or PLPA 3090 - Research in Plant Pathology (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 2018
- Required credits in this minor: 21 to 26
- 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. Students must complete at least 20 credits for the minor.

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)
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 ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
OR SOIL 4093 - Directed Study (1.0 - 7.0 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, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- 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.

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:
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOC, 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)
- ESPM 3261 - Economics and Natural Resources Management [SOC, ENV] (4.0 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 4242 - Methods for Environmental and Natural Resource Policy Analysis (3.0 cr)
- ESPM 5602 - 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 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)

Social Science and Humanities
Take no more than 1 course(s) from the following:
- ANTH 3041 - Ecological Anthropology (3.0 cr)
- ANTH 4053 - Economy, Culture, and Critique [SOC, GP] (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 3010 - Grand Challenge: The Global Climate Challenge Creating an Empowered Movement for Change [CIV] (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)
• 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)
• GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change [SOCS] (4.0 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 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)
• 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 3408W - Ecology [WI] (4.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (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)
• ESM 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)
• GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Environmental & Climate Justice [ENV] (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)
• GEOG 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
• HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
• GCC 5005 - Global Venture Design: What Impact Will You Make? [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 - Acara Impact Venture Launchpad - Moving Your Idea to Impact (1.5 cr)
• URB S 3751 - Understanding the Urban Environment [ENV] (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 2018
• Required credits in this minor: 17 to 19

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
This minor requires that students complete a minimum of 17 credits from the courses listed below. Students should work with their academic advisers to make sure the courses they choose to take will meet this requirement.

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)
• or ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• or ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
• or GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
• or PA 5002 - Introduction to Policy Analysis (1.5 cr)
• or 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)
• or AGRO 5999 - Special Topics: Workshop in Agronomy (1.0 - 6.0 cr)
• or AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
• or ANSC 1101 - Introductory Animal Science (4.0 cr)
• or APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• or APEC 3811 - Principles of Farm Management (3.0 cr)
• or APS 5103 - Integration of Sustainable Agriculture Concepts (3.0 cr)
• or EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• or ENT 4021 - Honey Bees and Insect Societies (3.0 cr)
• or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
• or ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• or ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
• or GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• or GWSS 3290 - Topics (1.0 - 3.0 cr)
• or HORT 1014 - Edible Landscape [TS] (3.0 cr)
• or HORT 5131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
• or HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Environmental & Climate Justice [ENV] (4.0 cr)
or PLPA 2001 - Introductory Plant Pathology (3.0 cr)
or SOIL 2125 - Basic Soil Science [PHYS, ENV] (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)

• Citizens/Science and Society
  • AFEE 4221 - Rural Leadership Development (3.0 cr)
or BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
or CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
or ENGL 3071 - The American Food Revolution in Literature and Television [CIV] (3.0 cr)
or ESPM 3011W - Ethics in Natural Resources [CIV, WI] (3.0 cr)
or ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
or FSCN 2001 - Healthy Foods, Healthy Lives: A Food System Approach to Cooking (3.0 cr)
or FSCN 3301 - Food Choices: Healing the Earth, Healing Ourselves (3.0 cr)
or GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change [SOCS] (4.0 cr)
or SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
or WRIT 3371W - Technology, Self, and Society [TS, WI] (3.0 cr)
or 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 2018
- 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
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.

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 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)
**Intro to Systems Thinking**
ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (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 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)
**Intro to Systems Thinking**
ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
**Content Based Integrated Core**
ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
**Content Based Integrated Core**
ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
or HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
**Experiential Learning**
Take 0 - 1 course(s) from the following:
- SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
**Interdisciplinary Learning**
Take 0 - 1 course(s) from the following:
- ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
- SSM 4407W - Sustainable Manufacturing Principles and Practices [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:
- 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)

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Information current as of August 24, 2018
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.

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 3402W - Civil Engineering Materials [WI] (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)
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 2018
- 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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

**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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

**The Honors Thesis**
Students must submit documentation of the final thesis/project approved by all three committee members.
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 2018
- 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)
- Cloquet Program

PLEASE NOTE: THESE CLASSES TAKE PLACE DURING THE SUMMER TERM, NOT IN FALL/SPRING
- Take 0 - 8 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 2018
• 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. Tomorrows 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 ESCI 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 6 credit(s) from the following:
• ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
• GCC 3009 - Rivers and Cities: Meeting Future Demands on Urban Water Systems [ENV] (3.0 cr)
Twin Cities Campus
Wildlife Care and Handling
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 19 to 27
- 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 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 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 1961H - 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)
• HORT 4601 - Aquaponics: Integrated fish and plant food systems (4.0 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 FW 4391. 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)
• FW 4391 - Independent Study: Wildlife (1.0 - 5.0 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 86 to 91
- Degree: Bachelor of Fine Arts

The BFA in acting is an intensive, individualized, actor training program that uses both faculty from theatre and dance, as well as the Guthrie Theater's professional artistic staff to provide selected students with the physical, vocal, emotional, and intellectual skills necessary to succeed as working performance artists. The degree is intended to prepare students for entry into advanced education at a conservatory and/or graduate school, or professional employment.

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
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- TH 1381 - New Voices (1.0 cr)

Acting
Take exactly 5 course(s) totaling exactly 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 exactly 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 exactly 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 exactly 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 exactly 2 credit(s) from the following:
• TH 4532 - Makeup for the Actor (2.0 cr)

Intensive
Take exactly 3 course(s) totaling exactly 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 exactly 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 exactly 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)
  or AFRO 5181W - Blacks in American Theatre [WI] (3.0 cr)

Electives
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• LNDN 3xxx
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 - 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 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 3993 - Directed Study (1.0 - 6.0 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 4556 - Projection Media Design, Creation, and Development (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 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 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 5993 - Directed Study (1.0 - 5.0 cr)
• TH 3152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)
  or TH 5152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)
  or GLOS 3152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)
  or GLOS 5152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (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 - Blacks in American Theatre [WI] (3.0 cr)
• TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or AFRO 5182W - Contemporary Black Theatre: 1960-Present [WI] (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:
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:
• 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 - Blacks in American Theatre [WI] (3.0 cr)
• TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or AFRO 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
Twin Cities Campus

African American and African Studies B.A.

African American and African Studies
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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 program credits 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 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
• AFRO 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
or AAS 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
or AMIN 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
or CHIC 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)

•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. At least one elective must be a gender-focused 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 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 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 3920 - Topics in African Studies (4.0 cr)
•AFRO 3993 - Directed Study (1.0 - 5.0 cr)
•AFRO 4112 - The Beat Goes on: Advanced Studies in the Poetry of Rap (3.0 cr)
•AFRO 4910 - Topics in African American and African Studies (1.0 - 3.0 cr)
•AFRO 5101 - Seminar: Introduction to Africa and the African Diaspora (3.0 cr)
•AFRO 5191 - Seminar: The African American Experience in South Africa (3.0 cr)
•AFRO 5910 - Topics in African American and African Studies (2.0 - 4.0 cr)
•AFRO 5993 - Directed Study (1.0 - 3.0 cr)
•AFRO 3001 - West African History: Early Times to 1800 [GP] (3.0 cr)
or HIST 3454 - West African History: Early Times to 1800 [GP] (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 (3.0 cr)
or HIST 3456 - World History and Africa (3.0 cr)
•AFRO 5103 - World History and Africa (3.0 cr)
or HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
•AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
or HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
•AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
or HIST 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
•AFRO 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
or HIST 3434 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
•AFRO 3578 - Contemporary Sub-Saharan African Popular Art Forms (3.0 cr)
or ARTH 3578 - Contemporary Sub-Saharan African Popular Art forms (3.0 cr)
•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)
•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)
•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, WI] (4.0 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)
•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 3864 - African American History: 1619 to 1865 (3.0 cr)  
or  
HIST 3864 - African American History: 1619-1865 (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)  
• AFRO 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)  
or  
HIST 3868W - Race, War, and Race Wars in American History [CIV, 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)  
• AFRO 4406 - Black Feminist Thought (3.0 cr)  
or  
AFRO 5406 - Black Feminist Thought (3.0 cr)  
or  
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)  
• AFRO 5181W - Blacks in American Theatre [WI] (3.0 cr)  
or  
TH 5181W - Blacks in American Theatre [WI] (3.0 cr)  
• AFRO 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)  
or  
TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)  
• 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)  
• Gender-focused Elective  
Other courses that do not appear on this list may count with prior approval from the departmental advisor.  
Take 1 or more course(s) from the following:  
• 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)  
or  
SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)  
• AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)  
or  
GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)  
• AFRO 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)  
or  
ENGL 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 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)  
• 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 upper-division credits required for the African American and African Studies BA.  
• AFRO 4991W - Thesis Research and Writing [WI] (3.0 cr)  
or  
AFRO 4xxx  
or  
AFRO 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:  
• 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)  
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)  
• AFRO 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)  
or  
ENGL 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 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 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)  

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Information current as of August 24, 2018
• 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, WI] (4.0 cr)
• AFRO 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)
or HIST 3868W - Race, War, and Race Wars in American History [CIV, WI] (3.0 cr)
• AFRO 5181W - Blacks in American Theatre [WI] (3.0 cr)
or TH 5181W - Blacks in American Theatre [WI] (3.0 cr)
• AFRO 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
Program Type: Undergraduate minor related to major
Requirements for this program are current for Fall 2018
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.

Minor Courses
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 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 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 3920 - Topics in African Studies (4.0 cr)
• AFRO 3945 - Directed Study (1.0 - 5.0 cr)
• AFRO 4105 - Ways of Knowing in Africa and the African Diaspora (3.0 cr)
• AFRO 4112 - The Beat Goes on: Advanced Studies in the Poetry of Rap (3.0 cr)
• AFRO 4910 - Topics in African American and African Studies (1.0 - 3.0 cr)
• AFRO 5101 - Seminar: Introduction to Africa and the African Diaspora (3.0 cr)
• AFRO 5102 - Seminar: The African American Experience in South Africa (3.0 cr)
• AFRO 5910 - Topics in African American and African Studies (2.0 - 4.0 cr)
• AFRO 5945 - Directed Study (1.0 - 3.0 cr)
• AFRO 3001 - World History and Africa [GP] (3.0 cr)
• HIST 3454 - West African History: Early Times to 1800 [GP] (3.0 cr)
• AFRO 3002 - West African History: 1800 to Present [GP] (3.0 cr)
• HIST 3455 - West African History: 1800 to Present [GP] (3.0 cr)
• AFRO 3103 - World History and Africa (3.0 cr)
• AFRO 5103 - World History and Africa (3.0 cr)
• AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
• HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3205 - History of South Africa from 1910 (3.0 cr)
• HIST 3435 - History of South Africa from 1910 (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 [SOOS, DSJ, WI] (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)
• 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 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)
• AFRO 3578 - Contemporary Sub-Saharan African Popular Art Forms (3.0 cr)
  or ARTH 3578 - Contemporary Sub-Saharan African Popular Art forms (3.0 cr)
• AFRO 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
• AFRO 3593 - 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)
• 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)
• 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, WI] (4.0 cr)
• 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)
• 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)
• 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 3864 - African American History: 1619 to 1865 (3.0 cr)
  or HIST 3864 - African American History: 1619-1865 (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 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)
  or HIST 3868W - Race, War, and Race Wars in American History [CIV, 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)
• AFRO 4406 - Black Feminist Thought (3.0 cr)
  or AFRO 5406 - Black Feminist Thought (3.0 cr)
  or GWSS 4406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
• AFRO 5181W - Blacks in American Theatre [WI] (3.0 cr)
  or TH 5181W - Blacks in American Theatre [WI] (3.0 cr)
• AFRO 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• 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)
Twin Cities Campus
American Indian Studies B.A.
American Indian Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 31 to 41
- Degree: Bachelor of Arts

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 - American Indian Peoples in the United States [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 4820W 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 4820W** - Senior 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 4820W** - Senior 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 4820W. 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 **AMIN 4532** - Vine Deloria, Jr.: A Renaissance Indigenous Figure (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)

- **Culture and History (Group B)**
  Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  - **AMIN 3701** - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
  - **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 4511** - American Indian Political Economy (3.0 cr)
  - **AMIN 5202** - American Indians and the 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** - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  or **POL 3701** - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  - **AMIN 3602** - 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)
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or POL 4507 - Law, Sovereignty, and Treaty Rights (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)
• AIN 3701 - Anishinaabemowin Culture and History [HIS, DSJ] (3.0 cr)
• AIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AIN 3876 - American Indian Education (3.0 cr)
• AIN 4511 - American Indian Political Economy (3.0 cr)
• AIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
• AIN 4990 - Topics in American Indian Studies (1.0 - 4.0 cr)
• AIN 4994 - Directed Research (1.0 - 12.0 cr)
• AIN 4996 - Field Study (1.0 - 12.0 cr)
• AIN 5202 - American Indians and the Supreme Court (3.0 cr)
• AIN 5920 - Topics in American Indian Studies (3.0 cr)
• AIN 3001 - Public History (3.0 cr)
or AMST 3003 - Public History (3.0 cr)
or HIST 3001 - Public History (3.0 cr)
• AIN 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
or AIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
• AIN 3141 - American Indian Language Planning (3.0 cr)
or AIN 5141 - American Indian Language Planning (3.0 cr)
• AIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or ANTH 5205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)
• AIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (3.0 cr)
• AIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• AIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
or AIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
• AIN 3501 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or AIN 3602 - 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)
• AIN 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)
• AIN 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)
• 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 AIN 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)
• AIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or POL 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
• AIN 4525W - Federal Indian Policy [WI] (3.0 cr)
or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
• AIN 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

Language
The Language track requires at least 31 credits of coursework, including AMIN 1001 & AMIN 4820W. 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)
  • OJIB 3127 - Ojibwe Language for Teachers (3.0 cr)
  • AMIN 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
or 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 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
  • AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
  • AMIN 3876 - American Indian Education (3.0 cr)
  • AMIN 4511 - American Indian Political Economy (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 5202 - American Indians and the 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 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
or 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)
- AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- AMIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
- ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
- RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)
- AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
- RELS 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 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
- ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
- ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
- AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
- 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)
- HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (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, Asian Americans & Chicanos in the U.S. (3.0 cr)
- ANTH 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)
- POL 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
- POL 4525W - Federal Indian Policy [WI] (3.0 cr)
- AMIN 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)
- AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
- 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
American Indian Studies Minor

Program Type: Undergraduate minor related to major
Requirements for this program are current for Fall 2018
Required credits in this minor: 18

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.

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 - American Indian Peoples in the United States [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 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 3876 - American Indian Education (3.0 cr)
• AMIN 4511 - American Indian Political Economy (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 5202 - American Indians and the 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 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
  or 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)
• AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
  or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AMIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
  or ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
ARTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)

AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
RELS 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 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
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)
HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (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, 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)
AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
POL 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
POL 4525W - Federal Indian Policy [WI] (3.0 cr)
AMIN 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 5412 - 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)
AMIN 5890 - Readings in American Indian and Indigenous History (3.0 cr)
HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
American Studies B.A.
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 33
- Degree: Bachelor of Arts

American Studies is an 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 partners 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.

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 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.

Preparatory Courses
Any AMST 1xxx, 2xxx or its cross-list may count towards this requirement.
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 2011 - The United States since September 11 [CIV, HIS] (3.0 cr)
- AMST 2031 - Chasing the American Dream: Economic Opportunity & Inequality in the U.S. [DSJ, HIS] (3.0 cr)
- AMST 1011 - Religions and American Identity in the United States from World War II to the Present [CIV] (3.0 cr)
  or RELS 1011 - Religions and American Identity in the United States from World War II to the Present [CIV] (3.0 cr)

Electives
Any AAS, AFRO, AMIN, AMST, CHIC 3xxx, 4xxx, or its cross-list may count towards this requirement. At least 4 of the 7 courses must be AMST or cross-listed with AMST. Other courses may be approved by the director of undergraduate studies.
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 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] (4.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (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)
- AAS 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
  or AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- AMST 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
  or CHIC 3752 - Chicanas and Chicanos in Contemporary Society [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)
- 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)
- 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 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)
- Other Electives
Take 0 - 3 course(s) from the following:
- 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)
- 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 3910 - Topics in African American and African Studies (1.0 - 3.0 cr)
- AFRO 4112 - The Beat Goes on: Advanced Studies in the Poetry of Rap (3.0 cr)
- AFRO 4910 - Topics in African American and African Studies (1.0 - 3.0 cr)
- AFRO 5910 - Topics in African American and African Studies (2.0 - 4.0 cr)
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- AMIN 3312 - American Indian Environmental Issues and Ecological Perspectives [ENV] (3.0 cr)
• AFIN 3604 - Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)
• AFIN 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
• AFIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AFIN 3876 - American Indian Education (3.0 cr)
• AFIN 4511 - American Indian Political Economy (3.0 cr)
• AFIN 4532 - Vine Deloria, Jr.: A Renaissance Indigenous Figure (3.0 cr)
• AFIN 4990 - Topics in American Indian Studies (1.0 - 4.0 cr)
• AFIN 5202 - American Indians and the Supreme Court (3.0 cr)
• AFIN 5920 - Topics in American Indian Studies (3.0 cr)
• CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CHIC 3221 - Introduction to 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 - Service Learning in the Chicanx/Latino Community [CIV] (3.0 cr)
• CHIC 3352 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (3.0 cr)
• CHIC 3375 - Folklore of Greater Mexico [DSJ] (3.0 cr)
• CHIC 3452 - Chicana/Indigena Studies: History, Culture, and Politics [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 Chicano Studies (3.0 cr)
• CHIC 4275 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
• CHIC 5920 - Topics in Chicana(o) Studies (3.0 cr)
• CHIC 5993 - Directed Studies (1.0 - 3.0 cr)
• AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (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 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 [SOCS, DSJ] (3.0 cr) or SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
• AAS 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
• AAS 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr) or HIST 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)
• CHIC 3452 - Chicana/o American Literature and Drama [LITR, DSJ] (3.0 cr) or ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
• AAS 3211W - American Race Relations [DSJ, WI] (3.0 cr) or SOC 3211W - American Race Relations [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 [SOCS, DSJ, WI] (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 3862 - American Immigration History [HIS, DSJ] (3.0 cr) or CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
• AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr) or HIST 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) or HIST 3875W - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
• AAS 3866 - Arab American Experiences (3.0 cr) or ALL 3866 - Arab American Experiences (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)
• 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 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr) or GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
• AFRO 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr) or ENGL 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
•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)
•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)
•AFRO 3598W - Introduction to African American Literature and Culture II [LITR, WI] (4.0 cr)
or ENGL 3598W - Introduction to African American Literature and Culture II [LITR, WI] (4.0 cr)
•AFRO 3627 - Seminar: Harlem Renaissance [AH, DSJ, WI] (3.0 cr)
or AFRO 5627 - Seminar: Harlem Renaissance [AH, DSJ, WI] (3.0 cr)
or ARTH 3627 - Seminar: Harlem Renaissance [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)
•AFRO 3864 - African American History: 1619 to 1865 (3.0 cr)
or HIST 3864 - African American History: 1619-1865 (3.0 cr)
or HIST 3865 - African American History: 1865 to the Present (3.0 cr)
or HIST 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or HIST 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)
or HIST 3868W - Race, War, and Race Wars in American History [CIV, WI] (3.0 cr)
•AFRO 4406 - Black Feminist Thought (3.0 cr)
or AFRO 5406 - Black Feminist Thought (3.0 cr)
or 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)
•AFRO 5181W - Blacks in American Theatre [WI] (3.0 cr)
or TH 5181W - Blacks in American Theatre [WI] (3.0 cr)
•AFRO 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
•AMIN 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
or 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)
•AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or GWSS 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (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 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or POL 3707 - American Indian Tribal Governments and Politics [HIS, 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 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or POL 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
or POL 4525W - Federal Indian Policy [WI] (3.0 cr)
or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
or HIST 5890 - Readings in American Indian and Indigenous History (3.0 cr)
or CHIC 3212 - Chicana Studies: 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)
or CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
or ARTH 3216W - Chicana and Chicano Art [WI] (3.0 cr)
or 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)
or CHIC 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
Capstone: Proseminar Sequence
The Proseminar I and II is a two-semester capstone that furthers understanding of important debates in American Studies and the methodologies that scholars use in their research. Proseminar I 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 in Proseminar II, 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 2 course(s) totaling exactly 6 credit(s) from the following:
- AMST 4961 - Proseminar I (3.0 cr)
- 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] (4.0 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 2018
• 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.

Minor Courses
Any AMST 3xxx, 4xxx, or its cross-list may count towards this requirement. Other courses may count with approval from the director of undergraduate studies.
Take 15 or more credits from the following:

- 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] (4.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (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 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)
  or HIST 3001 - Public History (3.0 cr)
- AMST 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
  or CHIC 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (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)
Twin Cities Campus
Anthropology B.A.
Anthropology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 to 44
- 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.

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 Anthropology BA is ANTH.

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 anthropology, but not both.
All incoming CLA freshmen must complete the First-Year Experience course sequence.

**Preparatory 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 Foundation Courses**
Take at least one course from at least three of the four subfields: archaeology; 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 3001 - Introduction to Archaeology [SOCS] (4.0 cr)

- **Biological Anthropology**
  - ANTH 3401 - The Human Fossil Record (3.0 cr)
  - ANTH 5401 - The Human Fossil Record (3.0 cr)
  - ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  - 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)
  - ANTH 3015W - Biology, Evolution, and cultural Development of Language [SOCS, WI] (3.0 cr)
  - ANTH 5015W - Biology, Evolution, and Cultural Development of Language [SOCS, WI] (3.0 cr)

**Upper-Division Training in Anthropology**
Take 5 or more course(s) from the following:

- ANTH 4xxx-5xxx
  At least 3 of the 5 upper-division courses in anthropology must be 4xx or 5xxx-level. Any ANTH 4xxx, 5xxx or its cross-list may count towards this requirement.

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 4009W - Warfare and Human Evolution [WI] (3.0 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 - Environmental Archaeology (3.0 cr)
- ANTH 4071 - Race, Culture, and Vision (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 - Archival Analysis for Anthropologists (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 5015W - Biology, Evolution, and Cultural Development of Language [SOCS, WI] (3.0 cr)
- ANTH 5031W - Ethnographies of Science [WI] (3.0 cr)
- ANTH 5041 - Ecological Anthropology (3.0 cr)
- ANTH 5112 - Reconstructing Hominin Behavior (3.0 cr)
- ANTH 5113 - Primate Evolution (3.0 cr)
- ANTH 5121 - Business Anthropology (2.0 cr)
- ANTH 5221 - Anthropology of Material Culture (3.0 cr)
- ANTH 5244 - Interpreting Ancient Bone (4.0 cr)
- ANTH 5269 - Analysis of Stone Tool Technology (4.0 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 5444 - Archaeological Ceramics (4.0 cr)
• ANTH 5446 - Archaeology of Representation as Communication (3.0 cr)
• ANTH 5448 - Applied Heritage Management (3.0 cr)
• ANTH 5501 - Archaeology and Native Americans [DSJ] (3.0 cr)
• ANTH 5980 - Topics in Anthropology (3.0 cr)
• ANTH 4007 - Laboratory Techniques in Archaeology (1.0 - 4.0 cr)
  or ANTH 4007H - Honors: Laboratory Techniques in Archaeology (1.0 - 4.0 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)
• ANTH 4344 - Europe and its Margins (3.0 cr)
  or GLOS 4344 - Europe and its Margins (3.0 cr)
• ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• ANTH 5128 - Anthropology of Education (3.0 cr)
  or OLPD 5128 - Anthropology of Education (3.0 cr)
• Directed studies, reading, and research courses can be used to satisfy part of the upper-division training 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
No more than 2 of the 5 upper-division courses in anthropology may be 3xxx-level. Any ANTH 3xxx or its cross-list may count towards this requirement.
Take 0 - 2 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 3015W - Biology, Evolution, and cultural Development of Language [SOCS, WI] (3.0 cr)
• ANTH 3020 - Topics in the Anthropology of Africa (3.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3028 - Introduction to Historical Archaeology (3.0 cr)
• ANTH 3034 - Roots Music in American Culture and Society (3.0 cr)
• ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 3041 - Ecological Anthropology (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 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 3401 - The Human Fossil Record (3.0 cr)
• ANTH 3402 - Zooarchaeology Laboratory (3.0 cr)
• ANTH 3405 - Human Skeletal Analysis (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 3006 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• ANTH 3021W - 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)
• ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
  or ALL 3676 - Culture and Society of India [GP, SOCS] (3.0 cr)
• ANTH 3076 - Culture and Society of India [GP, SOCS] (3.0 cr)
• 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)
• ANTH 3601 - Archaeology and Native Americans [DSJ] (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)
  • ANTH 4013H - Honors Thesis (3.0 cr)

Option 2
Students should enroll in both courses in the same semester.
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• ANTH 4xxx
  or ANTH 5xxx
• Take exactly 1 credit(s) from the following:
  • ANTH 4013 - Capstone Project (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:
• ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3046W - Romance and Culture [GP, 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 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• ANTH 4003W - Contemporary Perspectives in Cultural Anthropology [WI] (3.0 cr)
• ANTH 4009W - Warfare and Human Evolution [WI] (3.0 cr)
• ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
• ANTH 4094W - Directed Research [WI] (1.0 - 6.0 cr)
• ANTH 5031W - Ethnographies of Science [WI] (3.0 cr)
• ANTH 3015W - Biology, Evolution, and Cultural Development of Language [SOCS, WI] (3.0 cr)
  or ANTH 5015W - Biology, Evolution, and Cultural Development of Language [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 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
  or ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
• ANTH 3067W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)

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Information current as of August 24, 2018
Program Type: Undergraduate minor related to major
Requirements for this program are current for Fall 2018
Required credits in this minor: 15 to 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.

Preparatory Course
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
• ANTH 1002 - Cultural Heritage and Archaeology (4.0 cr)
• ANTH 1101 - Human Biological Diversity (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)

Electives
Any ANTH 3xxx-5xxx course may count toward the minor, including special topics. The courses should have a common focus.
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 3020 - Topics in the Anthropology of Africa (3.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3034 - Roots Music in American Culture and Society (3.0 cr)
• ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)

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Information current as of August 24, 2018
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<td>Economy, Culture, and Critique [SOCS, GP]</td>
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<td>Neanderthals: Biology and Culture of Humanity's Nearest Relative</td>
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• 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)
• ANTH 4344 - Europe and its Margins (3.0 cr)
  or GLOS 4344 - Europe and its Margins (3.0 cr)
• ANTH 5128 - Anthropology of Education (3.0 cr)
  or OLPD 5128 - Anthropology of Education (3.0 cr)
• Directed studies, reading, and research courses can be used to satisfy part of the electives 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)
Twin Cities Campus
Art B.A.
Art Department
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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:

Drawing, Painting, and Printmaking
• 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 [SOC, DSJ] (3.0 cr)
• ALL 1001 - Asian Film and Animation [AH, GP] (3.0 cr)
• AMST 1511 - Americans Abroad: Rethinking Travel, Culture, & Empire [GP, HIS] (3.0 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 1301W - Reading Culture: Theory and Practice [AH, WI] (3.0 cr)
• CSCL 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 5231 - Ethical Dilemmas and Legal Issues for Cultural Leaders (3.0 cr)
• ACHL 5251 - Arts Advocacy in the Political Landscape (2.0 cr)
• AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
• ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
• ALL 3357 - Taiwan Film (3.0 cr)
• ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• ALL 3456 - Japanese Film [GP] (3.0 cr)
• ALL 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
• ALL 3556 - Korean Film [AH, GP] (3.0 cr)
• ALL 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
• ALL 3856 - Palestinian Literature and Film [GP] (3.0 cr)
• ALL 5277 - Space and Modernity in Asia (3.0 cr)
• ALL 5351 - Chinese New Media (3.0 cr)
• ALL 5359 - Early Shanghai Film Culture (3.0 cr)
• ALL 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 3034 - Roots Music in American Culture and Society (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 3043 - Art, Aesthetics and Anthropology (3.0 cr)
• ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
• ANTH 4071 - Race, Culture, and Vision (3.0 cr)
• ANTH 5444 - Archaeological Ceramics (4.0 cr)
• ANTH 5446 - Archaeology of Representation as Communication (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 East 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 Now [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 - The Art of Picasso and the Modern Movement (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 3975 - Directed Professional Experience (1.0 - 2.0 cr)
• ARTH 3993 - Directed Study (1.0 - 4.0 cr)
• ARTH 5301 - Visual Culture of the Atlantic World (3.0 cr)
• ARTH 5324 - 15th-Century Painting (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 - Boom to Bust: American Art from the Roaring Twenties to the Great Depression (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)
• CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CHIC 3221 - Introduction to Chicano/a 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 3231 - Reality TV, History, Culture, and Economics (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)
• 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 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
• CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3221 - On Television [CIV] (3.0 cr)
• 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)
• 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 - Studies in Literature and the Other Arts (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 - Topics in French and Italian Cinema (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 - Gender and Sexuality in Art Since 1863 (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 - Topics: Visual, Cultural, and Literary Studies (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 - Topics in Italian Cinema (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 3705 - History and Future of Product Design (3.0 cr)
• PHIL 3502W - Introduction to Aesthetics [WI] (3.0 cr)
• PHIL 4501 - Principles of Aesthetics (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)
• 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 - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• ALL 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)
• ALL 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 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or ARTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or RELS 3322 - Art of Central and South America Before Columbus [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 3412 - Architectural History Since 1750 [HIS, GP] (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)
• ARCH 4423 - Gothic Architecture (3.0 cr)
or ARCH 5423 - Gothic Architecture (3.0 cr)
or ARCH 4424 - Renaissance Architecture (3.0 cr)
or ARCH 5424 - Renaissance Architecture (3.0 cr)
or ARCH 4425 - Baroque Architecture (3.0 cr)
or ARCH 5425 - Baroque Architecture (3.0 cr)
or ARCH 4432 - Modern Architecture (3.0 cr)
or ARCH 5432 - Modern Architecture (3.0 cr)
or ARCH 4433 - Contemporary Architecture (3.0 cr)
or ARCH 5433 - Contemporary Architecture (3.0 cr)
or ARCH 4435 - History of American Architecture (3.0 cr)
or ARCH 5435 - 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 - 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 3325 - 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 - The Cinema of Alfred Hitchcock [AH] (3.0 cr)
or ARTH 5926 - The Cinema of Alfred Hitchcock (3.0 cr)
or ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sassanian Persia (3.0 cr)
or CNES 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sassanian Persia (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 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 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] (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 - Aesthetics and the Valuation of Art (3.0 cr)
• GLBT 3305 - Queer Cinema [AH] (3.0 cr)
or GWSS 3305 - Queer Cinema [AH] (3.0 cr)
• GLOS 3322W - Social Movements, Protests, and Change [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:
• ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
• ALL 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 NonWestern 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 [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 - Introduction to Aesthetics [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 - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• ALL 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 - Social Movements, Protests, and Change [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 - Honors: The City in Film [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 2018
- 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.

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)
  - 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 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
In the final year of studies, a minimum of 8 Art Elective credits must be at the 5xxx level. A 5xxx-level course must be taken concurrently with both ARTS 5401W (Fall) and ARTS 5407 (Spring).
Take 2 or more course(s) from the following:
- ARTS 5xxx

**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)
- ALL 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, WI] (4.0 cr)
- ARTH 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
- CSCL 1301W - 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)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3357 - Taiwan Film (3.0 cr)
- ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
- ALL 3556 - Korean Film [AH, GP] (3.0 cr)
- ALL 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- ALL 3856 - Palestinian Literature and Film [GP] (3.0 cr)
- ALL 5277 - Space and Modernity in Asia (3.0 cr)
• ALL 5351 - Chinese New Media (3.0 cr)
• ALL 5359 - Early Shanghai Film Culture (3.0 cr)
• ALL 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 3034 - Roots Music in American Culture and Society (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 3043 - Art, Aesthetics and Anthropology (3.0 cr)
• ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
• ANTH 4071 - Race, Culture, and Vision (3.0 cr)
• ANTH 5444 - Archaeological Ceramics (4.0 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 5411 - Gender and Sexuality in Art Since 1863 (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 East Asian Art [GP] (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 Now [AH, CIV] (3.0 cr)
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3444 - Art Since 1945 [HIS] (3.0 cr)
• ARTH 3484 - The 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 3975 - Directed Professional Experience (1.0 - 2.0 cr)
• ARTH 5324 - 15th-Century Painting (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 - Boom to Bust: American Art from the Roaring Twenties to the Great Depression (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)
• CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CHIC 3221 - Introduction to Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)
• CHIC 3223 - Chicano/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
• COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• COMM 3645W - How Pictures Persuade [WI] (3.0 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 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
• CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3221 - On Television [CIV] (3.0 cr)
• 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 - Studies in Literature and the Other Arts (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 - Topics in French and Italian Cinema (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 - Gender and Sexuality in Art Since 1863 (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 - Topics: Visual, Cultural, and Literary Studies (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 - Topics in Italian Cinema (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 3705 - History and Future of Product Design (3.0 cr)
• PHIL 3502W - Introduction to Aesthetics [WI] (3.0 cr)
• PHIL 4501 - Principles of Aesthetics (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 - Consumer This! The Sociology and Politics of Consumption (3.0 cr)
• SOC 3415W - 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 - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
• ALL 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 RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 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 ARTH 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 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 - The Cinema of Alfred Hitchcock [AH] (3.0 cr)
or ARTH 5926 - The Cinema of Alfred Hitchcock (3.0 cr)
or ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
or CNES 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (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 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] (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 - Aesthetics and the Valuation of Art (3.0 cr)
• GLBT 3305 - Queer Cinema [AH] (3.0 cr)
or GWSS 3305 - Queer Cinema [AH] (3.0 cr)
• GLOS 3322W - Social Movements, Protests, and Change [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)

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 3480 - 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:
These courses also fulfill other requirements of the major
Take 0 - 1 course(s) from the following:

- **ALL 3356W** - Chinese Film [AH, WI] (3.0 cr)
- **ALL 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 NonWestern 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 3069W** - Introduction to Aesthetics [WI] (4.0 cr)
- **ARTS 3206W** - Art + Ecology [WI] (4.0 cr)
- **ARTS 3404W** - Professional Practices in the Arts [WI] (3.0 cr)
- **ARTS 5401W** - BFA Seminar Capstone: 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 3455W** - How Pictures Persuade [WI] (3.0 cr)
- **CSCL 3212W** - Documentary Cinema: History and Politics [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)
- **CSCL 4131W** - History of Graphic Design [WI] (4.0 cr)
- **GER 3604W** - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
- **PHIL 3502W** - Introduction to Aesthetics [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)
- **ARTH 3014W** - Art of India [AH, GP, WI] (4.0 cr)
- **ARCH 3711W** - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- **ARTS 3401W** - 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)
- **GEOG 3374W** - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- **GEOG 3734W** - The City in Film [AH, WI] (4.0 cr)

These courses do not fulfill other requirements of the major
Take 0 - 1 course(s) from the following:

- **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)
- **GEOG 3374W** - The City in Film [AH, WI] (4.0 cr)
- **GEOG 3374W** - The City in Film [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 2018
- 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 departments 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 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
  or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
• ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
  or CNES 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (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: 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 5765 - Early Chinese Art (3.0 cr)
  • ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or ALL 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)

• Era II: ca. 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 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 - Visual Culture of the Atlantic World (3.0 cr)
  • ARTH 5324 - 15th-Century Painting (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)
  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)
  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)
  • 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 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 ALL 3014W - Art of India [AH, GP, WI] (4.0 cr)
  • ARTH 3015W - Art of Islam [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)

• Era III: 1800 to Present
  Take 1 or more course(s) from the following:
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 Now [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 - The Art of Picasso and the Modern Movement (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 5575 - Boom to Bust: American Art from the Roaring Twenties to the Great Depression (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 - The Cinema of Alfred Hitchcock [AH] (3.0 cr)
or
  ARTH 5926 - The Cinema of Alfred Hitchcock (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
  ALL 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)
or
  AMIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or
  ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or
  RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)

Directed Museum Experience, Study, or Research
Take at most 3 credit(s) from the following:
- ARTH 3975 - 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 ArH 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)
• ALL 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 2018
• 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)
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] (3.0 cr)
• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
• ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
• ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
• 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)
• 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 3014W - Art of India [AH, GP, WI] (4.0 cr)
• ALL 3014W - Art of India [AH, GP, WI] (4.0 cr)
• 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)
• 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 - Visual Culture of the Atlantic World (3.0 cr)
• ARTH 5324 - 18th-Century Painting (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)
• 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)
• 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)
• 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 (3.0 cr)
• ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
• 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)
• ARTH 5781 - Age of Empire: The Mughals, Safavids, and Ottomans (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)
• ARTH 5783 - Art, Diplomacy and Empire (3.0 cr)
• 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)
• ALL 3014W - Art of India [AH, GP, WI] (4.0 cr)
• 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)
• RELS 5777 - The Diversity of Traditions: Indian Art 1200 to Present (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 3005 - American Art [AH] (4.0 cr)
- ARTH 3012 - 19th and 20th Century Art (3.0 cr)
- ARTH 3401 - Art Now [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 - The Art of Picasso and the Modern Movement (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 5575 - Boom to Bust: American Art from the Roaring Twenties to the Great Depression (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 - The Cinema of Alfred Hitchcock [AH] (3.0 cr)
or ARTH 5926 - The Cinema of Alfred Hitchcock (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)
- ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
or ALL 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)

**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 ALL 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 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or AMIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)

**Directed Museum Experience, Study, or Research**
Take at most 3 credit(s) from the following:
- ARTH 3975 - 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 2018
- 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)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3357 - Taiwan Film (3.0 cr)
- ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
- ALL 3556 - Korean Film [AH, GP] (3.0 cr)
- ALL 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- ALL 3856 - Palestinian Literature and Film [GP] (3.0 cr)
- ALL 5277 - Space and Modernity in Asia (3.0 cr)
- ALL 5351 - Chinese New Media (3.0 cr)
- ALL 5359 - Early Shanghai Film Culture (3.0 cr)
- ALL 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)
• 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 - Studies in Literature and the Other Arts (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)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GER 3630 - Topics in German Cinema (3.0 cr)
• GLBT 3411 - Gender and Sexuality in Art Since 1863 (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 - Topics: Visual, Cultural, and Literary Studies (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 - Topics in Italian Cinema (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 3705 - History and Future of Product Design (3.0 cr)
• PHIL 3502W - Introduction to Aesthetics [WI] (3.0 cr)
• PHIL 4501 - Principles of Aesthetics (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)
• ENGL 3301 - Asian America through Arts and Culture [AH, DSJ] (3.0 cr)
• MDES 4121 - History of Fashion, 19th to 21st Century (4.0 cr)
• 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)
• AFRO 5120 - Social and Intellectual Movements in the African Diaspora (3.0 cr)
• HIST 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
• AFRO 5627 - Seminar: Harlem Renaissance (3.0 cr)
• ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
• 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 - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
- ALL 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)
- ALL 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
  or ARTH 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
- AMIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
  or ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
  or ARTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
  or RELS 3322 - Art of Central and South America Before Columbus [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 3412 - Architectural History Since 1750 [HIS, GP] (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 4423 - Gothic Architecture (3.0 cr)
- ARCH 4424 - Renaissance Architecture (3.0 cr)
  or ARCH 4424 - Renaissance Architecture (3.0 cr)
- ARCH 4425 - Baroque Architecture (3.0 cr)
  or ARCH 4425 - Baroque Architecture (3.0 cr)
- ARCH 4432 - Modern Architecture (3.0 cr)
  or ARCH 4432 - Modern Architecture (3.0 cr)
- ARCH 4434 - Contemporary Architecture (3.0 cr)
  or ARCH 4434 - Contemporary Architecture (3.0 cr)
- ARCH 4435 - History of American Architecture (3.0 cr)
  or ARCH 4435 - 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 - 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)
- 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 - The Cinema of Alfred Hitchcock [AH] (3.0 cr)
  or ARTH 5926 - The Cinema of Alfred Hitchcock (3.0 cr)
- ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
  or CNES 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
- ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sassanian Persia (3.0 cr)
  or CNES 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sassanian Persia (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 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 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] (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 - Aesthetics and the Valuation of Art (3.0 cr)
• GLBT 3305 - Queer Cinema [AH] (3.0 cr)
or GWSS 3305 - Queer Cinema [AH] (3.0 cr)
• GLOS 3322W - Social Movements, Protests, and Change [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 2018
- 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 complete at least 15 credits of coursework, including one core course. At least 12 credits must be at the 3xxx-5xxx level.

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.

Core Course
Take 1 or more course(s) from the following:
- 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 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 [SOCS, DSJ] (3.0 cr)
  or SOC 3503H - Honors: 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 3601W - War and Empire: Asian American Perspectives [GP, 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)

Elective Courses
In addition to the required core course, take 12 or more credits of any 1xxx, 3xxx, 4xxx, or 5xxx AAS course (or other advisor-approved courses).
Take 12 or more credit(s) from the following:
• AAS 1101 - Imagining Asian America [SOCS, DSJ] (3.0 cr)
• AAS 3351 - Asian Americans and Popular Culture [AH, DSJ] (3.0 cr)
• AAS 3601W - War and Empire: Asian American Perspectives [GP, WI] (3.0 cr)
• AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
• DNCE 3495 - Dance and Global Tourism [GP] (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 - American Race Relations [DSJ, WI] (3.0 cr)
  or SOC 3211W - American Race Relations [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 [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 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 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 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)
• AAS 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
• AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
  or HIST 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)
  or HIST 3875W - Comparative Race and Ethnicity in U.S. History [HIS, 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 to Present [HIS, 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)
• CHIC 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 Languages and Literatures B.A.
Asian Languages and Literatures
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 to 55
- Degree: Bachelor of Arts

Asia is home to deeply historical world cultures and the fastest growing economies and populations in the world. This major prepares students to interact with the people, cultures, and environments of Asia.

Students in this program will combine study of an Asian language with the study of the cultures, literatures, and media of Asia. Language study provides advanced spoken and written skills that allow students to communicate with people in the region of study. Culture courses range widely and offer students an opportunity to become familiar with the major literary, religious, film and popular cultural movements in various regions in Asia. The majors six sub-plans are based on language of concentration: Arabic, Chinese, Hindi and Urdu, Hmong, Japanese, and Korean. The students concentrated study in upper-division courses culminates in the senior capstone project. Study abroad is strongly 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/Urdu, Hmong, Japanese, or Korean. 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/Urdu, Hmong, or Japanese, or Korean.

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 Languages and Literatures BA is ALL.

Students with advanced or native language ability may substitute ALL 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 languages and literatures, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Reading Asian Cultures
ALL 3001 is only offered in the Fall.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ALL 3001 - Reading Asian Cultures (3.0 cr)
ALL and ALL-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 ALL Courses
Transfer or study abroad courses may not count towards Group A.
Take 4 - 7 course(s) totaling 12 or more credit(s) from the following:

- ALL 3232W - "Short" Poetry in China and Japan [WI] (3.0 cr)
- ALL 3261W - Writing (in) East Asian Cultures: From Oracle Bones to Tattoos [AH, WI] (3.0 cr)
- ALL 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
- ALL 3334 - Voices from Ancient China: The Book of Songs and The Songs of the South [LITR] (3.0 cr)
- ALL 3336 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)
- ALL 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3357 - Taiwan Film (3.0 cr)
- ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
- ALL 3433W - Traditional Japanese Literature in Translation [LITR, WI] (3.0 cr)
- ALL 3436 - Postwar Japanese Literature in Translation (3.0 cr)
- ALL 3437 - The Japanese Novel [LITR, GP] (3.0 cr)
- ALL 3441 - Japanese Theater [AH] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3458 - Japanese Animation [GP] (3.0 cr)
- ALL 3466 - Japanese Popular Culture in a Global Context (3.0 cr)
- ALL 3467 - Science Fiction, Empire, Japan (3.0 cr)
- ALL 3468 - Environment, Technology and Culture in Modern Japan [ENV] (3.0 cr)
- ALL 3536 - Modern Korean Literature [LITR, GP] (3.0 cr)
- ALL 3556 - Korean Film [AH, GP] (3.0 cr)
- ALL 3576 - Language & Society of the Two Koreas (3.0 cr)
- ALL 3586 - Cold War Cultures in Korea (3.0 cr)
- ALL 3651 - Ghosts of India [GP] (3.0 cr)
- ALL 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- ALL 3772 - Hmong Language and Culture Immersion in China (4.0 cr)
- ALL 3820 - Topics in Arab Culture (3.0 cr)
- ALL 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
- ALL 3856 - Palestinian Literature and Film [GP] (3.0 cr)
- ALL 3867 - Orientalism and the Arab World (3.0 cr)
- ALL 3900 - Topics in Asian Literature (3.0 cr)
- ALL 3920 - Topics in Asian Culture (3.0 cr)
- ALL 5261 - Work of Translation: Theory, Function, and Practice (3.0 cr)
- ALL 5276 - Liberalism and Its Critics: Global Perspectives (3.0 cr)
- ALL 5277 - Space and Modernity in Asia (3.0 cr)
- ALL 5351 - Chinese New Media (3.0 cr)
- ALL 5359 - Early Shanghai Film Culture (3.0 cr)
- ALL 5436 - Literature by 20th-Century Japanese Women in Translation (3.0 cr)
- ALL 5446 - Kabuki: A Pop, Queer, and Classical Theater in Japan (3.0 cr)
- ALL 5486 - Images of "Japan" (3.0 cr)
- ALL 5866 - Gender and Sexuality in Modern Arabic Literature (3.0 cr)
- ALL 5900 - Topics in Asian Literature (3.0 cr)
- ALL 5920 - Topics in Asian Culture (3.0 cr)
- LANG 3501 - Introduction to Korean Civilization (3.0 cr)
- LANG 3502 - Introduction to Korean History (3.0 cr)
- LANG 3503 - Introduction to Korean Poetry: Sijo (3.0 cr)
- ALL 3014W - Art of India [AH, GP, WI] (4.0 cr)
- ARTH 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 ALL 3371 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
- or EAS 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
- or HIST 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
- or HIST 5479 - History of Chinese Cities and Urban Life (3.0 cr)
- or ALL 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 ALL 3373 - Religion and Society in Imperial China (3.0 cr)
or HIST 3466 - Religion and Society in Imperial China (3.0 cr)
or RELS 3373 - Religion and Society in Imperial China (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or ALL 3457 - War and Peace in Japan Through Popular Culture (4.0 cr)
or HIST 3476 - War and Peace in Japan Through Popular Culture (4.0 cr)
or ALL 3478 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or EAS 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or HIST 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or ALL 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
or GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
or ALL 3671 - Hinduism (3.0 cr)
or ALL 3671 - Hinduism (3.0 cr)
or HIST 3492 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
or RELS 5671 - Hinduism (3.0 cr)
or ALL 3672 - Buddhism [GP] (3.0 cr)
or RELS 3371 - Buddhism [GP] (3.0 cr)
or ALL 3666 - Culture and Society of India [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 ALL 3771 - History of Southeast Asia [GP] (3.0 cr)
or HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
or ALL 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)
or ALL 3866 - Arab American Experiences (3.0 cr)
or AAS 3866 - Arab American Experiences (3.0 cr)
or ALL 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 ALL 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 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)
or 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)

• 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:

or ARAB 3811 - Egyptian Colloquial Arabic I (3.0 cr)
or ARAB 3812 - Egyptian Colloquial Arabic II (3.0 cr)
or ARAB 3900 - Topics in Arabic (3.0 cr)
or ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
or GEOG 3211 - East Asia (3.0 cr)
or GEOG 3212 - Producing India (3.0 cr)
or HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
or 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 3547 - The Ottoman Empire [His, GP] (3.0 cr)
or POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
or POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
or POL 4477W - Struggles and Issues in the Middle East (4.0 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 GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, 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 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 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)
• 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)
• 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)
• HIST 3546 - Islam and the West (3.0 cr)
  or RELS 3714 - Islam and the West (3.0 cr)
• GLOS 3643 - Islam and the West (3.0 cr)
• HIST 3569 - 20th Century India (3.0 cr)
• HIST 3489 - 20th Century India (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)
  • HNUR 3021 - Intermediate Hindi-Urdu I (5.0 cr)
  • HNUR 3022 - Intermediate Hindi-Urdu II (5.0 cr)
  • HNDI 3031 - Advanced Hindi I (4.0 cr)
  • HNUR 3032 - Advanced Hindi-Urdu 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)
• 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
  • CHN 3201 - Chinese Calligraphy (2.0 cr)
  • CHN 3202 - Intermediate Chinese Calligraphy (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:

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Information current as of August 24, 2018
ARAB 1101 - Beginning Arabic I (5.0 cr)
ARAB 1102 - Beginning Arabic II (5.0 cr)
CHN 1011 - Beginning Modern Chinese I (6.0 cr)
CHN 1012 - Beginning Modern Chinese II (6.0 cr)
CHN 1015 - Accelerated Beginning Modern Chinese (5.0 cr)
HMNG 1011 - Beginning Hmong I (5.0 cr)
HMNG 1012 - Beginning Hmong II (5.0 cr)
HMNG 1015 - Accelerated Beginning Hmong (5.0 cr)
HNUR 1011 - Beginning Hindi-Urdu I (5.0 cr)
HNUR 1012 - Beginning Hindi-Urdu II (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)

Capstone
The capstone project in the department of Asian Languages and Literatures 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 Languages and Literatures capstone, but are still responsible for taking the 35 credits required for the Asian Languages and Literatures BA. ALL 4901W is only offered in the Spring.

Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ALL 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:
• ALL 3232W - "Short" Poetry in China and Japan [WI] (3.0 cr)
• ALL 3261W - Writing (in) East Asian Cultures: From Oracle Bones to Tattoos [AH, WI] (3.0 cr)
• ALL 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
• ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
• ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• ALL 3433W - Traditional Japanese Literature in Translation [LITR, WI] (3.0 cr)
• ALL 3441 - Japanese Theater [AH] (3.0 cr)
• ALL 4901W - Capstone Project in Asian Languages & Literatures [WI] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
• ALL 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)
• ALL 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
or GLOS 3637W - Modern Indian Literature [LITR, GP, 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 (6.0 cr)
- CHN 1012 - Beginning Modern Chinese II (6.0 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-Urdu

Prerequisite Courses
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:

- HNUR 1011 - Beginning Hindi-Urdu I (5.0 cr)
- HNUR 1012 - Beginning Hindi-Urdu II (5.0 cr)
- HNUR 3021 - Intermediate Hindi-Urdu I (5.0 cr)
- HNUR 3022 - Intermediate Hindi-Urdu II (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)
- HNUR 3032 - Advanced Hindi-Urdu 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)
Twin Cities Campus
Asian Languages and Literatures Minor
Asian Languages and Literatures
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 16 to 30

Asia is an increasingly important part of world politics, economics, and culture. The minor prepares students to interact with the people and cultures of Asia.

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-Urdu, or Japanese, or Korean, or Hmong. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

The ALL 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, Hmong, Hindi-Urdu, Japanese, or Korean. 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 ALL 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 languages and literatures, 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 ALL 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:
- ALL 3001 - Reading Asian Cultures [3.0 cr]
- ALL 3232W - "Short" Poetry in China and Japan [WI] [3.0 cr]
- ALL 3261W - Writing (in) East Asian Cultures: From Oracle Bones to Tattoos [AH, WI] [3.0 cr]
- ALL 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] [3.0 cr]
- ALL 3334 - Voices from Ancient China: The Book of Songs and The Songs of the South [LITR] [3.0 cr]
- ALL 3336 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] [3.0 cr]
- ALL 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] [3.0 cr]
- ALL 3356W - Chinese Film [AH, WI] [3.0 cr]
- ALL 3357 - Taiwan Film [3.0 cr]
- ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] [3.0 cr]
- ALL 3433W - Traditional Japanese Literature in Translation [LITR, WI] [3.0 cr]
- ALL 3436 - Postwar Japanese Literature in Translation [3.0 cr]
- ALL 3437 - The Japanese Novel [LITR, GP] [3.0 cr]
- ALL 3441 - Japanese Theater [AH] [3.0 cr]
- ALL 3456 - Japanese Film [GP] [3.0 cr]
- ALL 3458 - Japanese Animation [GP] [3.0 cr]
- ALL 3466 - Japanese Popular Culture in a Global Context [3.0 cr]
- ALL 3467 - Science Fiction, Empire, Japan [3.0 cr]
- ALL 3468 - Environment, Technology and Culture in Modern Japan [ENV] [3.0 cr]
• ALL 3536 - Modern Korean Literature [LITR, GP] (3.0 cr)
• ALL 3556 - Korean Film [AH, GP] (3.0 cr)
• ALL 3576 - Language & Society of the Two Koreas (3.0 cr)
• ALL 3586 - Cold War Cultures in Korea (3.0 cr)
• ALL 3651 - Ghosts of India [GP] (3.0 cr)
• ALL 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
• ALL 3772 - Hmong Language and Culture Immersion in China (4.0 cr)
• ALL 3820 - Topics in Arab Culture (3.0 cr)
• ALL 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
• ALL 3856 - Palestinian Literature and Film [GP] (3.0 cr)
• ALL 3867 - Orientalism and the Arab World (3.0 cr)
• ALL 3900 - Topics in Asian Literature (3.0 cr)
• ALL 3920 - Topics in Asian Culture (3.0 cr)
• ALL 5261 - Work of Translation: Theory, Function, and Practice (3.0 cr)
• ALL 5276 - Liberalism and Its Critics: Global Perspectives (3.0 cr)
• ALL 5277 - Space and Modernity in Asia (3.0 cr)
• ALL 5351 - Chinese New Media (3.0 cr)
• ALL 5359 - Early Shanghai Film Culture (3.0 cr)
• ALL 5436 - Literature by 20th-Century Japanese Women in Translation (3.0 cr)
• ALL 5446 - Kabuki: A Pop, Queer, and Classical Theater in Japan (3.0 cr)
• ALL 5486 - Images of "Japan" (3.0 cr)
• ALL 5866 - Gender and Sexuality in Modern Arabic Literature (3.0 cr)
• ALL 5900 - Topics in Asian Literature (3.0 cr)
• ALL 5920 - Topics in Asian Culture (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)
• ALL 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)
• ALL 3371 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
or EAS 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
or HIST 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
or HIST 5479 - History of Chinese Cities and Urban Life (3.0 cr)
• ALL 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 ALL 3373 - Religion and Society in Imperial China (3.0 cr)
or HIST 3466 - Religion and Society in Imperial China (3.0 cr)
or RELS 3373 - Religion and Society in Imperial China (3.0 cr)
• ALL 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)
• ALL 3478 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or EAS 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or HIST 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or ALL 3457 - War and Peace in Japan Through Popular Culture (4.0 cr)
or HIST 3476 - War and Peace in Japan Through Popular Culture (4.0 cr)
• ALL 3671 - Hinduism (3.0 cr)
or ALL 5671 - Hinduism (3.0 cr)
or HIST 3492 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
or RELS 5671 - Hinduism (3.0 cr)
• ALL 3672 - Buddhism [GP] (3.0 cr)
or RELS 3371 - Buddhism [GP] (3.0 cr)
or GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
• ALL 3676 - Culture and Society of India [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)
• ALL 3771 - History of Southeast Asia [GP] (3.0 cr)
or HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
• ALL 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)
• ALL 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)
• ALL 3866 - Arab American Experiences (3.0 cr)
or AAS 3866 - Arab American Experiences (3.0 cr)
• ALL 3872 - The Cultures of the Silk Road (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (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)

• 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)
or ARAB 3812 - Egyptian Colloquial Arabic II (3.0 cr)
or ARAB 3900 - Topics in Arabic (3.0 cr)
or ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
or GEOG 3211 - East Asia (3.0 cr)
or GEOG 3212 - Producing India (3.0 cr)
or HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
or 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 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
or POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
or POL 4477 - Struggles and Issues in the Middle East (4.0 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 GEOG 3145 - The Islamic World [SOCS, 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 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 HIST 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 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 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)
or 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 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
or GLOS 3969 - 20th Century India (3.0 cr)
or HIST 3489 - 20th Century India (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)
or ARAB 3102 - Intermediate Arabic II (5.0 cr)
or ARAB 5040 - Readings in Arabic Texts (3.0 cr)
or ARAB 5101 - Advanced Arabic I (4.0 cr)
or ARAB 5102 - Advanced Arabic II (4.0 cr)
or CHN 3016 - Accelerated Intermediate Modern Chinese (5.0 cr)
or CHN 3021 - Intermediate Modern Chinese I (5.0 cr)
or CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
or CHN 3031 - Advanced Modern Chinese I (4.0 cr)
or CHN 3032 - Advanced Modern Chinese II (4.0 cr)
or CHN 4041 - Advanced Readings in Modern Chinese I (4.0 cr)
or CHN 4042 - Advanced Readings in Modern Chinese II (4.0 cr)
or CHN 5040 - Readings in Chinese Texts (3.0 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 2 or more course(s) totaling 8 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 (6.0 cr)
- CHN 1012 - Beginning Modern Chinese II (6.0 cr)
- 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)
- 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)

Hindi-Urdu
Prerequisite Courses
Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:
• HNUR 1011 - Beginning Hindi-Urdu I (5.0 cr)
• HNUR 1012 - Beginning Hindi-Urdu 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 8 or more credit(s) from the following:
• HNUR 3021 - Intermediate Hindi-Urdu I (5.0 cr)
• HNUR 3022 - Intermediate Hindi-Urdu II (5.0 cr)
• HNDI 3031 - Advanced Hindi I (4.0 cr)
• HNUR 3032 - Advanced Hindi-Urdu 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)
or
• 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)
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 2018
- 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
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)
  - PHYS 1501V - Honors Introduction to Mechanics [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)
  - PHYS 1502V - Honors Introduction to Electricity and Magnetism [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 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.

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)

Core Astrophysics Courses
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)

Core Physics Courses
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)

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 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
• AST 5012 - The Interstellar Medium (4.0 cr)
• AST 5031 - Interpretation and Analysis of Astrophysical Data (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 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)
• 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. The 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 2018
- 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)
  - 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)

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)
  - 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 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
  - 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 - Planets of the Solar System (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, Scandinavian, & Dutch

College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- 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. Students who place above GER 1001 may take GER 1022 in place of GER 1001 and 1002.

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)
- 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 complete 4 semester(s) of German, with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

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 1 upper-division course in the minor must be taken in the German program 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)

Art, Culture, and Literature Electives

Note: The following list is not exhaustive, and related upper-division and study abroad courses may count towards this requirement.

Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- QSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
- QSD 3512W - Imagined Communities: German and European, Culture and Controversies, 1700 to Present [WI] (3.0 cr)
- CSCL 3412W - Psychoanalysis and Literature Part I: The Essential Freud [WI] (3.0 cr)
- Other course approved by DUS
History, Politics, and Society Electives

Note: The following list is not exhaustive, and related upper division and study abroad courses may count towards this requirement. Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- HIST 3724 - War & Revolution in 20th Century Europe: The Question of Gender (3.0 cr)
- HIST 3746 - Game of Thrones: Emperors, Knights and Witches in Central Europe (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 DUS
**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 2018  
- 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](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://cla.umn.edu/academics-experience/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**  
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 2018
• 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
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 major. All five courses are equivalent and credit cannot be granted for more than one version of the course. The 3xxx-level courses may count as an Introductory Course, a CNES Core Course, or as an Elective, but the 1xxx-level courses may only count as an 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)
• CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 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.

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

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Information current as of August 24, 2018
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 3104 - Ancient Rome: Kings and Consuls (3.0 cr)
- CNES 3105 - Ancient Rome: The Age of Augustus (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)
- 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 (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 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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 - The Dead Sea Scrolls (3.0 cr)
  or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
  or JWST 3204 - The Dead Sea Scrolls (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)
  or RELS 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)

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. Other courses in history, art history, medieval studies or other related departments may be used with pre-approval.
from the director of undergraduate studies. Note: GRK 5100 & 5200, and LAT 5100 & 5200 may only count if an appropriate author or text is studied. Pre-approval from the director of undergraduate studies is required.

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 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- RELS 5504 - Development of Israelite Religion II (3.0 cr)

**AKKA 5011 - Elementary Akkadian I (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**AKKA 5012 - Elementary Akkadian II (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**CNES 5713 - Introduction to Ugaritic (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**GRK 5100 - Advanced Reading (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**GRK 5200 - Biblical Greek (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**LAT 5100 - Advanced Reading (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**LAT 5200 - Advanced Reading in Later Latin (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

**RELS 5504 - Development of Israelite Religion II (3.0 cr)**
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- RELS 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (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)
- CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
- COPT 5001 - Elementary Coptic (3.0 cr)
- COPT 5002 - Elementary Coptic (3.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
- RELS 5071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- RELS 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)
- ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- 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)
- JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- RELS 3201 - The Bible: Context and Interpretation (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)
- RELS 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)
- CNES 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
- JWST 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
- 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)
- RELS 3535 - Death and the Afterlife in the Ancient World [AH] (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)
- RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
- CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)

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Information current as of August 24, 2018
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
or RELS 3541 - Age of St. Augustine of Hippo (3.0 cr)
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (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 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)
• HEBR 5300 - Post-Biblical Hebrew; Second Temple Period (3.0 cr)
• LAT 5100 - Advanced Reading (3.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (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)
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 3204 - The Dead Sea Scrolls (3.0 cr)
or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
or JWST 3204 - [Inactive] (3.0 cr)
or RELS 3204 - The Dead Sea Scrolls (3.0 cr)
or RELS 5204 - The Dead Sea Scrolls (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)
or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (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)
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (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)
• 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)
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 2018
• 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.

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

Required prerequisites

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. The 3xxx-level courses may count as an Introductory Course or a Minor Course, but the 1xxx-level courses may only count as an 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)
• CNES 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 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.

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.

**Minor Courses**

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. Other courses in history, art history, medieval studies or other related departments may be used with pre-approval from the director of undergraduate studies. Note: GRK 5100 & 5200, and LAT 5100 & 5200 may only count if an appropriate author or text is studied. Pre-approval from the director of undergraduate studies is required.

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 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- RELS 5504 - Development of Israelite Religion II (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)
  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 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)
  or RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
- CNES 3604 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  or JWST 3604 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
  or RELS 3604 - 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)
- ARTH 3013W - 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)
- ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
  or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (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)
- CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
- COPT 5001 - Elementary Coptic (3.0 cr)
- COPT 5002 - Elementary Coptic (3.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- LAT 5100 - Advanced Reading (3.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or REL 3071 - Greek and Hellenistic Religions (3.0 cr)
  or HIST 3071 - 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 RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
  or REL 3072 - The Birth of Christianity [AH] (3.0 cr)
  or REL 5072 - The Birth of Christianity [AH] (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)
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 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 3108 - Age of St. Augustine of Hippo (3.0 cr)
or RELS 3541 - Age of St. Augustine of Hippo (3.0 cr)

• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (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 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)
• HEBR 5300 - Post-Biblical Hebrew: Second Temple Period (3.0 cr)
• LAT 5100 - Advanced Reading (3.0 cr)
• LAT 5200 - Advanced Reading in Later Latin (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)
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 3204 - The Dead Sea Scrolls (3.0 cr)
or RELS 3204 - The Dead Sea Scrolls (3.0 cr)
or JWST 3204 - (Inactive) (3.0 cr)
or RELS 5204 - The Dead Sea Scrolls (3.0 cr)
or RELS 5204 - The Dead Sea Scrolls (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)
or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (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)
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (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 2018
• 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. BSE majors are exempt from the CLA requirement that 18 credits of coursework must come from outside the major.

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 Senior Project, 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.

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 4 semesters or the equivalent of a 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. Note: A course may only be counted once to satisfy the major requirements. At least one upper-division (3xxx-level or above) course in the major must be writing intensive. See upper-division writing intensive course list.

UMNTC policy requires students to complete at least half of their upper-division major work (3xxx courses or higher) on the campus from which they are seeking to graduate. BSE students must complete a minimum of 18 upper-division (UD) credits in the major by completing at least 9 credits of their biosciences and 9 credits of their science & society UD credits in UMNTC courses.

All incoming CLA freshmen must complete the First Year Experience course sequence.

BSE Foundations
Take BSE 2001 and one Foundations in Science and Society course for a total of 5-6 credits. BSE 2001 should be taken within one semester of declaring the BSE major or prior to completing 90 credits.

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 1 or more course(s) from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Designators</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 1301W</td>
<td>Our Globalizing World [SOCS, GP, WI]</td>
<td>(3.0 cr)</td>
<td></td>
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<tr>
<td>PHIL 1003W</td>
<td>Introduction to Ethics [CIV, WI]</td>
<td>(4.0 cr)</td>
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<tr>
<td>ANTH 1003W</td>
<td>Understanding Cultures [SOCS, GP, WI]</td>
<td>(4.0 cr)</td>
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<tr>
<td>PHIL 1002W</td>
<td>Introduction to Philosophy [AH, WI]</td>
<td>(4.0 cr)</td>
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<tr>
<td>or PHIL 1026W</td>
<td>Philosophy and Cultural Diversity [AH, DSJ, WI]</td>
<td>(3.0 cr)</td>
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<tr>
<td>SOCI 1001</td>
<td>Introduction to Sociology [SOCS, DSJ]</td>
<td>(4.0 cr)</td>
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<tr>
<td>or SOCI 1011V</td>
<td>Honors: Introduction to Sociology [SOCS, DSJ, WI]</td>
<td>(4.0 cr)</td>
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</tbody>
</table>

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 BIOL 1009 and 2 more courses from two different areas (Cell Biology, Genetics, Ecology, Evolution) for a total of 10-12 credits.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Designators</th>
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<tbody>
<tr>
<td>BIOL 1009</td>
<td>General Biology [BIOL]</td>
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<tr>
<td>or BIOL 1009H</td>
<td>Honors: General Biology [BIOL]</td>
<td>(4.0 cr)</td>
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Take 2 or more course(s) totaling 6 or more credit(s) from the following:

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIOL 4003</td>
<td>Genetics</td>
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<tr>
<td>or GCD 3022</td>
<td>Genetics (3.0 cr)</td>
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<tbody>
<tr>
<td>GCD 3033</td>
<td>Principles of Cell Biology</td>
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<tr>
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<th>Title</th>
<th>Designators</th>
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<tbody>
<tr>
<td>EEB 3407</td>
<td>Ecology</td>
<td>(3.0 cr)</td>
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<tr>
<td>or EEB 3408W</td>
<td>Ecology [WI]</td>
<td>(4.0 cr)</td>
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<tr>
<td>or EEB 3807</td>
<td>Ecology</td>
<td>(4.0 cr)</td>
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<tr>
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<tbody>
<tr>
<td>EEB 3409</td>
<td>Evolution</td>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Designators</th>
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</thead>
<tbody>
<tr>
<td>ANTH 3306W</td>
<td>Medical Anthropology</td>
<td>[GP, WI] (3.0 cr)</td>
</tr>
<tr>
<td>BSE 3361W</td>
<td>Geography and Public Policy [WI]</td>
<td>(3.0 cr)</td>
</tr>
<tr>
<td>or GEOG 3361W</td>
<td>Geography and Public Policy [WI]</td>
<td>(3.0 cr)</td>
</tr>
<tr>
<td>CSCL 3323</td>
<td>Science and Culture [AH]</td>
<td>(3.0 cr)</td>
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</tbody>
</table>
or CSCL 3322 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (4.0 cr)
or 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 3505 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
• Take PHIL 1005/1005H only prior to completing 90 credits and PHIL 4607 after completing 60 credits.
  • PHIL 1005 - Scientific Reasoning (4.0 cr)
or PHIL 1005H - Scientific Reasoning (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)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
or SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)

Required Science & Society Methods Course
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)
• GEOG 3521 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 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)

• Qualitative Methods
Take 0 or more course(s) from the following:
• ANTH 4035 - Ethnographic Research Methods (3.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
or SOC 3801 - Sociological Research Methods (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, CIV] (3.0 cr)
• 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 3085 - 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. BIOC 3021 meets 3 of the 9 credits required in upper-division UMNTC biosciences courses.

Chemistry 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)

Chemistry 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)

Organic Chemistry
CHEM 2301 - Organic Chemistry I (3.0 cr)

Biochemistry
BIOC 3021 - Biochemistry (3.0 cr)
Calculus
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)

Physics
(Physics 1201W is preferred; PHYS 1001W does not meet this requirement)
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 1401W - Honors Physics I [PHYS, WI] (4.0 cr)
or PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)

Electives
Take 18-27 credits (six courses) by completing 9-15 credits of Biosciences Electives and 9-12 credits of Science & Society Electives. Select coursework in consultation with BSE advisor and UMNTC 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, 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)
or CHEM 2304 - Organic Chemistry II for the Life Sciences (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)
• BIOL 2022 - General Botany (3.0 cr)
• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• BIOL 3270 - Introduction To Systems Biology (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 4404 (Inactive) (3.0 cr)
• PMB 4511 - Flowering Plant Diversity (3.0 cr)
• PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• BIOL 3002 - Plant Biology: Function (2.0 cr)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)

Climate Change and Environmental Systems
Take 0 or more course(s) from the following:
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
• ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)
• EEB 4611 - Biogeochemical Processes (3.0 cr)
or EEB 4811 (Inactive) (4.0 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 3101 - Conservation of Plant Biodiversity (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 4199 - Mammalogy (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)
• 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)
or ANTH 3629 - 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 (3.0 cr)
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
• GCD 4161 - Developmental Biology (3.0 cr)
• GCD 3022 - Genetics (3.0 cr)
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 - Introduction to Neurobiology I: Molecular, Cellular, and Systems (3.0 cr)
• NSCI 3102W - Introduction to Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4100 - 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)
or ANTH 3405 - Human Skeletal Analysis (4.0 cr)
or ANTH 5405 - Human Skeletal Analysis (4.0 cr)
or ANTH 3405 - Human Skeletal Analysis (4.0 cr)
or 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)
or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
• 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)
• 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 2005 - Animal Diversity Laboratory (2.0 cr)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
  BIOL 2007 - Marine Animal Diversity Laboratory (2.0 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)
  or EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
  or EEB 3811 - Introduction to Animal Behavior (4.0 cr)
• EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
  or 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)
• PMB 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 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
• MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
• MICB 4251 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
  or VBS 2032 - General Microbiology With Laboratory (5.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
  or 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)
• BIOL 2022 - General Botany (3.0 cr)
• BIOL 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)
• EEB 4811 [Inactive] (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 1 (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)
• 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 (2.0 cr)
• BIOL 3002 - Plant Biology: Function (2.0 cr)
  with BIOL 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 3 or more 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 [SOCS, GP] (3.0 cr)
• ANTH 3036 - The Body in Society (3.0 cr)
• ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
• ANTH 5031W - Ethnographies of Science [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 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 3411W - Geography of Health and Health Care [WI] (4.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)

Health & Environmental Policy
Take no more than 3 course(s) from the following:
• POL 3872W [Inactive][WI] (4.0 cr)
• 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)
• 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)

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 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)
  • GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)

• History of Medicine and Science
  Take no more than 2 course(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 3075 - Technology and Medicine in Modern America [HIS, TS] (3.0 cr)
  • 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)
  • 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 3135 - Introduction to Individual Differences (3.0 cr)
  • NURS 2001 - Human Growth and Development: A Life Span Approach (3.0 cr)
  • NURS 3690 - Life Span, Growth, and Development I (2.0 cr)

• Public Health
  Take no more than 2 course(s) from the following:
  • PUBH 3102 - Issues in Environmental and Occupational Health (3.0 cr)
  • PUBH 3802 [Inactive] (3.0 cr)
  • PUBH 3807 [Inactive] (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 Service (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 [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 - 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 - Environment & Society: An Enduring Conflict [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 3571 - Inequality in America: A Political Economy Approach [SOCS] (4.0 cr)
  • HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity [DSJ] (4.0 cr)
  • HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Environmental & Climate Justice [ENV] (4.0 cr)
  • HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change [SOCS] (4.0 cr)
  • ID 3595W - HECUA Off-Campus Study Program: Agriculture and Justice Agroecosystems in Context [CIV, WI] (4.0 cr)
  • ID 3596 - HECUA Off-Campus Study Program: Agriculture and Justice - Justice and the U.S. Food System (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)
     • BTHX 5900 - Independent Study in Bioethics (1.0 - 4.0 cr)
     or CSCL 4993 - Directed Study (1.0 - 3.0 cr)
     • GLOS 4994 - Directed Research (1.0 - 4.0 cr)
     or GWSS 4994 - Directed Research (1.0 - 8.0 cr)
     • HSCI 5993 - Directed Studies (1.0 - 15.0 cr)
     or HSCI 5994 - Directed Research (1.0 - 15.0 cr)
     • PHIL 3993 - Directed Studies (1.0 - 3.0 cr)
     or PSY 4970 - Individual Reading and Research (1.0 - 4.0 cr)
     or POL 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)
- **ANTH 4993** - Directed Study (1.0 - 6.0 cr)
- **CSCL 4993** - Directed Study (1.0 - 3.0 cr)
- **GLOS 5994** - Directed Research (1.0 - 4.0 cr)
- **GWSS 4994** - Directed Research (1.0 - 8.0 cr)
- **PHIL 3993** - Directed Studies (1.0 - 3.0 cr)
- **PSY 4993** - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
- **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)
- **ANTH 5031W** - Ethnographies of Science [WI] (3.0 cr)
- **BSE 3361W** - Geography and Public Policy [WI] (3.0 cr)
- **CSCL 3351W** - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
- **GEOG 3361W** - Geography and Public Policy [WI] (3.0 cr)
- **GEOG 3381W** - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- **GEOG 3411W** - Geography of Health and Health Care [WI] (4.0 cr)
- **GLOS 3613V** - 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 3701W** - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- **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 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)
- **HMED 4965W** - Senior Research in Medical History (3.0 cr)
- **PHIL 3005W** - General History of Western Philosophy: Modern Period [AH, WI] (4.0 cr)
- **PHIL 3320W** - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- **PHIL 3322W** - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
- **PHIL 3601W** - Scientific Thought [WI] (4.0 cr)
- **POL 3872W** [Inactive][WI] (4.0 cr)
- **SOC 3251W** - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- **SOC 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)
- **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)
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 2018
• 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
Note: CLA 1005 and CLA 2005 are only available to students in the President's Emerging Scholars Program.
• 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)
  or ID 3101 - Major and Career Exploration for Transfer Students (2.0 cr)
• OUE 2001 - Academic Planning and Exploration (1.0 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:
• ID 3101 - Major and Career Exploration for Transfer Students (2.0 cr)
  or ID 2201 - Career Readiness for CLA Students (1.0 cr)

Career Planning Course
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• ID 3201 - Career Planning (2.0 cr)

Career Readiness Experiences for Credit
Take 2 or more course(s) from the following:
• ID 3208 - Internship Reflection: Making Meaning of Your Experience (1.0 cr)
• OLPD 3330 - Global Identity: Connecting Your International Experience to Your Future (1.0 cr)
• CLA 1052 - CLA Freshman Research (1.0 - 2.0 cr)
  or Research Practicum Course (3 cr.)
Twin Cities Campus
Chemistry B.A.
Chemistry
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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, and a C- or better in all other prerequisite courses

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)
- **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)

Physics
Take exactly 2 course(s) totaling 8 - 10 credit(s) from the following:
- **Physics I**
  - PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 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)
- **Physics II**
  - PHYS 1202W - Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 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 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.

Preparatory 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)

Major Courses
Take exactly 5 course(s) totaling 16 - 17 credit(s) from the following:
• 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)
• 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
One 1 directed research course for a maximum of 2 credits may count towards the Advanced Chemistry Laboratory Electives or Research requirement.
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
If an honors student chooses to enroll in directed research, they should enroll in CHEM 4094V.
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 4094V - Directed Research [WI] (1.0 - 5.0 cr)
• CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
Electives
Take 3 or more credit(s) from the following:
- CHEM 3xxx
- CHEM 4xxx
- CHEM 5xxx
- BIOL 3xxx
- BIOL 4xxx
- BIOL 5xxx
- BIOC 3xxx
- BIOC 4xxx
- BIOC 5xxx
- GCD 3xxx
- GCD 4xxx
- GCD 5xxx
- CHEN 3xxx
- CHEN 4xxx
- CHEN 5xxx
- MATS 3xxx
- MATS 4xxx
- MATS 5xxx
- MATH 3xxx
- MATH 4xxx
- MATH 5xxx
- PHYS 3xxx
- PHYS 4xxx
- PHYS 5xxx
- PUBH 3xxx
- PUBH 4xxx
- PUBH 5xxx
- STAT 3xxx
- STAT 4xxx
- STAT 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:
- 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)
- CHEM 4094V - Directed Research [WI] (1.0 - 5.0 cr)
Twin Cities Campus
Chemistry Minor
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2018
• 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 2311H - 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. This includes CHEM 2910 and CHEM 2912. Take 5 or more credit(s) from the following:
• CHEM 2xxx
• CHEM 3xxx
• CHEM 4xxx
• CHEM 5xxx

Directed Study
Take at most 2 credit(s) from the following:
• CHEM 2094 - Directed Research (1.0 - 3.0 cr)
• CHEM 4094V - Directed Research [WI] (1.0 - 5.0 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 2018
- 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 - Introduction to Chicana/o Studies: Critical Paradigms [DSJ] (3.0 cr)

**Community and Advocacy**
Take 1 or more course(s) from the following:
- CHIC 1275 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
- CHIC 3275 - Service 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 Studies: 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 - Chicano Music and Art [AH, DSJ] (3.0 cr)
- ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)

**History**
Take 1 or more course(s) from the following:
- CHIC 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
- GLOS 3634 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
- HIST 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
- CHIC 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
  - or HIST 3446 - Chicana/o 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 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)

**Upper-division Electives**
Take 15 - 18 credit(s) from the following:
- CHIC 3212 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
- CHIC 3216W - Chicana and Chichano Art [AH, CIV, WI] (3.0 cr)
  - or ARTH 3216W - Chicana and Chichano Art [WI] (3.0 cr)
- CHIC 3221 - Introduction to Chicana/o Cultural Studies: Barrio Culture and the Aesthetics of Everyday Life [AH, DSJ] (3.0 cr)
- CHIC 3223 - Chicana/o and Latino/o Representation in Film [AH, DSJ] (3.0 cr)
- CHIC 3275 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
- CHIC 3352 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (3.0 cr)
- CHIC 3375 - Folklore of Greater Mexico [DSJ] (3.0 cr)
- CHIC 3452 - Xicana/Indigena Studies: History, Culture, and Politics [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 Chicano 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 5275 - Service Learning in the Chicano/Latino Community [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 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 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 Chicano@ 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 2018
• 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 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CHIC 3216W - Chicana and Chicano Art [WI] (3.0 cr)
• CHIC 3221 - Introduction to 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 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
• CHIC 3352 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (3.0 cr)
• CHIC 3357 - Folktale of Greater Mexico [DSJ] (3.0 cr)
• CHIC 3452 - Xicana/Indigena Studies: History, Culture, and Politics [DSJ] (3.0 cr)
• CHIC 3452W - Chicana and Chicano Art [WI] (3.0 cr)
• CHIC 3467 - 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 Studies: La Chicanita in Contemporary Society [AH, DSJ] (3.0 cr)
  or GWSS 3410 - Chicana Studies: La Chicanita in Contemporary Society [AH, DSJ] (3.0 cr)
• CHIC 3216W - Chicana and Chicano Art [AH, CIV, WI] (3.0 cr)
• CHIC 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)
• CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
• CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• CHIC 3412 - Comparative Indigenous Feminisms [GP] (3.0 cr)
• CHIC 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
• CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• CHIC 3243 - Central American Revolutions (3.0 cr)
• CHIC 3243 - Central American Revolutions (3.0 cr)
• CHIC 3245 - History of Modern Mexico (3.0 cr)
• CHIC 3245 - History of Modern Mexico (3.0 cr)
• CHIC 3363 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
• CHIC 3363 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
• CHIC 3364 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
• CHIC 3364 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
• CHIC 3366 - Chicana/o History II: WWIII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
• CHIC 3366 - Chicana/o History II: WWIII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
• CHIC 3350W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
• CHIC 3350W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
• CHIC 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
• CHIC 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
• CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• CHIC 3852 - 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 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 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 - Chicana/o - Latina/o Gender and Sexuality Studies [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)
Child psychology focuses on behavioral development from the prenatal period to maturity in the areas of cognition, ethology, genetics, language, learning, perception, and social behavior. The Institute of Child Development, housed in the College of Education and Human Development, offers a bachelor of arts, a bachelor of science, and a minor in child psychology through the College of Liberal Arts (CLA). All undergraduate child psychology courses are considered CLA courses and count toward the CLA graduation requirements. Majors may not receive a second major or second baccalaureate degree in psychology.

The bachelor of arts program places a stronger emphasis on the applied aspects of child psychology. Emphasizing a more applied approach to child psychology, the BA requires field study participation (or directed research experience), allowing students to gain practical experience in the field of child psychology. Students have the opportunity to take a course in social work, youth studies, early childhood education, public health, or cultural anthropology. With a combination of intensive training in developmental psychology and a field study experience, the program prepares students for careers and additional training in such areas as early childhood education, counseling, and human service programs. Students are required to meet the second language requirement as determined by CLA.

**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 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 child psychology BA is CPSY.

Students may earn no more than one undergraduate degree in child psychology: a BA, a BS, or a minor. Students may combine the BA in child 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.

Foundational Courses
Take exactly 3 course(s) totaling 11 - 12 credit(s) from the following:

Introduction to Psychology
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
- PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)

- Statistics
  - EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  - SOC 3811 - Social Statistics [MATH] (4.0 cr)
  - STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
  - PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)

- Introduction to Research Methods in Child Psychology
  - CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)

Social and Personality Development
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 4331 - Social and Personality Development (3.0 cr)

Disabilities and Abnormal Child Psychology
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 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)

Child Development Elective
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CPSY 1334 - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
- CPSY 4302 - Infant Development (3.0 cr)
- CPSY 4303 - Adolescent Psychology (3.0 cr)
- CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)

Supporting Applied Elective
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- ANTH 3003 - Cultural Anthropology (3.0 cr)
- CPSY 5241 - Practicum in Early Childhood Education (3.0 cr)
- EPSY 3301 - Introduction to Educational Psychology [SOCS] (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)
- PSY 3511 - Introduction to Counseling Psychology (3.0 cr)
- PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
- SW 1001 - Introduction to the World of Social Work: A Global Perspective (3.0 cr)
- SW 3701 - Introduction to Child Maltreatment: Intervention and Prevention (3.0 cr)

Field Study or Directed Research
Take 2 or more credit(s) from the following:
- CPSY 4996 - Field Study in Child Psychology (1.0 - 4.0 cr)
- CPSY 4994 - Directed Research 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.

- Capstone
  Students who double major within CLA and choose to complete the capstone requirement in their other major may waive the Child Psychology capstone, but they do need to replace the 2 credits with another Elective course. Double majors whose second major is outside of CLA are required to complete the Child Psychology capstone.

Non-Honors Sequence
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- CPSY 4347W - Senior Project [WI] (2.0 cr)
or Honors Sequence
Honors students seeking to complete the honors thesis in child psychology should follow this sequence. Students should take CPSY 3360H in the fall of their junior year. Students must take at least 2 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 - Senior Project [WI] (2.0 cr)
- CPSY 4994V - Directed Research in Child Psychology (Honors Thesis) [WI] (1.0 - 6.0 cr)
Twin Cities Campus
Child Psychology B.S.
Institute of Child Development
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 50 to 52
• Degree: Bachelor of Science

Child psychology focuses on behavioral development from the prenatal period to maturity in the areas of cognition, ethology, genetics, language, learning, perception, and social behavior. The Institute of Child Development, housed in the College of Education and Human Development, offers a bachelor of arts, a bachelor of science, and a minor in child psychology through the College of Liberal Arts (CLA). All undergraduate child psychology courses are considered CLA courses and count toward the CLA graduation requirements. Majors may not receive a second major or baccalaureate degree in psychology.

The bachelor of science program places a stronger emphasis on research in the field of developmental psychology. With a combination of intensive training in developmental psychology and in-depth directed research, the program prepares students for graduate study in psychology, education, medicine, law, sociology, and other behavioral sciences.

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 child psychology: a BA, a BS, or a minor. Students may combine the BS in child 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.

Foundational Courses
Take exactly 3 course(s) totaling 11 - 12 credit(s) from the following:
Introduction to Psychology
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
• Statistics
  • EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
or **SOC 3811** - Social Statistics [MATH] (4.0 cr)
or **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)
or **PSY 3801** - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)

**Introduction to Research Methods in Child Psychology**
- **CPSY 3308W** - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)

**Social and Personality Development**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **CPSY 4331** - Social and Personality Development (3.0 cr)

**Biological Foundations of Development**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **CPSY 4329** - Biological Foundations of Development (3.0 cr)

**Special Topics in Child Development**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **CPSY 4310** - Special Topics in Child Development (1.0 - 4.0 cr)

**Disabilities and Abnormal Child Psychology**
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- **CPSY 4311** - Behavioral and Emotional Problems of Children (3.0 cr)
- **CPSY 4313W** - Disabilities and Development [WI] (4.0 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)

**Child Development Electives**
No more than 3 total credits of CPSY 4996 may count in the major, and 4996 can only be used as an option in this grouping if 3 credits are earned. These credits may be spread over multiple semesters.
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- **CPSY 1334** - Global Issues on Children and Youth in Society [CIV] (3.0 cr)
- **CPSY 4302** - Infant Development (3.0 cr)
- **CPSY 4303** - Adolescent Psychology (3.0 cr)
- **CPSY 4336** - Development and Interpersonal Relationships (3.0 cr)
Take at most 3 credit(s) from the following:
- **CPSY 4996** - Field Study in Child Psychology (1.0 - 4.0 cr)

**Directed Research**
Take 6 or more credit(s) from the following:
- **CPSY 4994** - Directed Research 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 child psychology capstone, but they do need to replace the 2 credits with another elective course. Double majors whose second major is outside of CLA are required to complete the child psychology capstone.

**Non-Honors Sequence**
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- **CPSY 4347W** - Senior Project [WI] (2.0 cr)

**Honors Sequence**
Honors students seeking to complete the honors thesis in child psychology should follow this sequence. Students should take CPSY 3360H in the fall of their junior year. Students must take at least 2 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** - Senior Project [WI] (2.0 cr)
- **CPSY 4994V** - Directed Research in Child Psychology (Honors Thesis) [WI] (1.0 - 6.0 cr)
Twin Cities Campus
Child 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 2018
• Required credits in this minor: 20 to 21

Child psychology focuses on behavioral development from the prenatal period to maturity in the areas of cognition, ethology, genetics, language, learning, perception, and social behavior.

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

Admission Requirements
Students must complete 1 course before admission to the program.

An Introduction to Child Psychology course (CPSY 2301 or 3301) must be completed or in progress in order to declare the minor.

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

Required prerequisites
Introduction to Child Psychology
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 child psychology: a BA, a BS, or a minor. Students may combine the child psychology minor with the BA or the BS in psychology, but not both.

Foundational Course
CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)

Social and Personality 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 4343 - Cognitive Development (3.0 cr)

Cognitive and Biological Development
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CPSY 4302 - Infant Development (3.0 cr)
• CPSY 4329 - Biological Foundations of Development (3.0 cr)
• CPSY 4341 - Perceptual Development (3.0 cr)
• CPSY 4345 - Language Development and Communication (3.0 cr)

Child Development Elective
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 4303 - Adolescent Psychology (3.0 cr)
• CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
• CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
• CPSY 4336 - Development and Interpersonal Relationships (3.0 cr)
Twin Cities Campus
Chinese Language Advanced-Level Certificate
Asian Languages and Literatures
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2018
- 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 (6.0 cr)
- CHN 1012 - Beginning Modern Chinese II (6.0 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:
- ALL 3336 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)
- ALL 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
- ALL 3351 - Martial Arts in Chinese Literature and Film (3.0 cr)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3357 - Taiwan Film (3.0 cr)
- ALL 3362 - Women Writers in Chinese History (3.0 cr)
- ALL 5351 - Chinese New Media (3.0 cr)
- ALL 5359 - Early Shanghai Film Culture (3.0 cr)
- ALL 5374 - The Monkey King and Transcultural China: Chinese Myth, Legend, and Ideology (3.0 cr)
- ALL 3373 - Religion and Society in Imperial China (3.0 cr)
  or HIST 3466 - Religion and Society in Imperial China (3.0 cr)
  or RELS 3373 - Religion and Society in Imperial China (3.0 cr)
- ALL 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 and Near Eastern Archaeology Minor
Classical & Near Eastern Studies
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2018
• Required credits in this minor: 18 to 19

The minor allows students to concentrate their studies on the material remains from the ancient civilizations of the Near East, Greece, Rome and their neighbors from prehistory to late antiquity. The minor includes courses from the Departments of Classical and Near Eastern Studies, Anthropology, and Art History.

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

Minor Requirements
Preparatory Courses
Other courses may count towards the Preparatory Courses requirement with director of undergraduate studies approval.
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3104 - Ancient Rome: Kings and Consuls (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• ANTH 3001 - Introduction to Archaeology [SOCS] (4.0 cr)
• CNES 3105 - Ancient Rome: The Age of Augustus (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 JWST 1201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 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)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• ANTH 3028 - Introduction to Historical Archaeology (3.0 cr)
  or ANTH 5028 - Introduction to Historical Archaeology (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (3.0 cr)
• ARTH 3152 - Art and Archaeology of Ancient Greece [AH, GP] (3.0 cr)
• CNES 3152 - Art and Archaeology of Ancient Greece [AH, GP] (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 - 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)

Electives
One course must be taken from each group. The remaining 3 credits can be taken from any group, or may also come from a 6-credit course.
Take exactly 5 course(s) totaling 15 or more credit(s) from the following:

Group 1 - Culture
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 - Ancient Rome: Kings and Consuls (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3105 - Ancient Rome: The Age of Augustus (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (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 3108 - Age of St. Augustine of Hippo (3.0 cr)
or RELS 3541 - Age of St. Augustine of Hippo (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 - The Dead Sea Scrolls (3.0 cr)
or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
or RELS 3204 - The Dead Sea Scrolls (3.0 cr)
or RELS 5204 - The Dead Sea Scrolls (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)

• Group 2 - Archaeology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 3001 - Introduction to Archaeology [SOCS] (4.0 cr)
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• ANTH 5444 - Archaeological Ceramics (4.0 cr)
• ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• 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)
• ANTH 3028 - Introduction to Historical Archaeology (3.0 cr)
or ANTH 5028 - Introduction to Historical Archaeology (3.0 cr)

• Group 3 - History of Art
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
• ARTH 5785 - Art of Islamic Iran (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 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)
• ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
or CNES 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
or RELS 3192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (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)

• Group 4 - Practical Work
Take one of the following courses or an approved excavation, fieldwork or survey with a practical component (taken either as Directed Study or Study Abroad). Students seeking opportunities for excavation, survey and other fieldwork should seek out the Fieldwork Opportunities website of the Archaeological Institute of America: https://www.archaeological.org/fieldwork/afob/
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 3221 - Field School (6.0 cr)
• ANTH 4007 - Laboratory Techniques in Archaeology (1.0 - 4.0 cr)
• ANTH 3008 - Introduction to Flintknapping (3.0 cr)
or ANTH 5008 - Advanced Flintknapping (3.0 cr)
• ANTH 3402 - Zooarchaeology Laboratory (3.0 cr)
or ANTH 5402 - Zooarchaeology Laboratory (3.0 cr)
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 2018  
- Required credits in this minor: 18 to 29

This interdisciplinary program encompasses the study of Greek and Roman cultures and their influence on Western civilization, and it encourages study of related or parallel cultures, such as those of Islam and the Indian subcontinent.

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)  
- Other intro course may be taken with DUS approval.

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 Greek and Latin Language Coordinators.  
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)  
  or LAT 1002 - Beginning Latin II (5.0 cr)

Minor Requirements  
Students are required to complete 2 semester(s) of Greek or 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 classical civilization, but not both.

Minor Courses  
Students must take 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.  
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 - Ancient Rome: Kings and Consuls (3.0 cr)  
- CNES 3105 - Ancient Rome: The Age of Augustus (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 - Stuart England: 17th-Century Literature and Culture (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)
• 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 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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)
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Augustus (3.0 cr)
• CNES 5013 - Introduction to Roman Law (3.0 cr)
• FRIT 3600 - The Renaissance (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
  or HIST 3006 - Prehistoric Pathways to World Civilization [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 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or RELS 3182 - Egypt and Archaeology of Ancient Egypt and Western Asia [AH, GP] (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 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
  or ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (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 - Ancient Rome: Kings and Consuls (3.0 cr)
• CNES 3105 - Ancient Rome: The Age of Augustus (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 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or RELS 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)
  or CNES 5072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
  or RELS 3072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3018 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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)


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 2018
- 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 - Ancient Rome: Kings and Consuls (3.0 cr)**
- **CNES 3105 - Ancient Rome: The Age of Augustus (3.0 cr)**
- **CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)**
- **CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)**
- **CNES 3201 - The Bible: Context and Interpretation [LITR]** (3.0 cr)
- **CNES 3204 - The Dead Sea Scrolls (3.0 cr)**
- **CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)**
- **CNES 3535 - Death and the Afterlife in the Ancient World [AH]** (3.0 cr)
- **CNES 3951W - Capstone [WI]** (4.0 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.
- **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.
 depend 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** - Ancient Rome: Kings and Consuls (3.0 cr)
- **CNES 3105** - Ancient Rome: The Age of Augustus (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** - Stuart England: 17th-Century Literature and Culture (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)
- **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** - Age of St. Augustine of Hippo (3.0 cr)
  or **RELS 3541** - Age of St. Augustine of Hippo (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 - Age of St. Augustine of Hippo (3.0 cr)
or RELS 3541 - Age of St. Augustine of Hippo (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 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)
•ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or CNES 5185 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
or RELS 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
•ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (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 - Ancient Rome: Kings and Consuls (3.0 cr)
•CNES 3105 - Ancient Rome: The Age of Augustus (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 - Age of St. Augustine of Hippo (3.0 cr)
or RELS 3541 - Age of St. Augustine of Hippo (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 - Introduction to Roman Law (3.0 cr)
or LAW 6029 - Introduction to Roman Law (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
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** - Ancient Rome: Kings and Consuls (3.0 cr)
- **CNES 3105** - Ancient Rome: The Age of Augustus (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)
- **CNES 3601** - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  or **HIST 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)
  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** - Age of St. Augustine of Hippo (3.0 cr)
  or **RELS 3541** - Age of St. Augustine of Hippo (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 **RELS 3201** - The Bible: Context and Interpretation [LITR] (3.0 cr)
- **CNES 3204** - The Dead Sea Scrolls (3.0 cr)
  or **CNES 5204** - The Dead Sea Scrolls (3.0 cr)
  or **RELS 3204** - The Dead Sea Scrolls (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 **JWST 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
  or **JWST 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 **RELS 3535** - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or **LAT 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)
  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 and Advanced Greek or Latin Courses**
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 - Ancient Rome: Kings and Consuls (3.0 cr)
- CNES 3105 - Ancient Rome: The Age of Augustus (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 3071 - "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)
- RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- RELS 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 3108 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (3.0 cr)
- ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
- ARTH 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)
- CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- CNES 3204 - The Dead Sea Scrolls (3.0 cr)
- CNES 5204 - The Dead Sea Scrolls (3.0 cr)
- RELS 3204 - The Dead Sea Scrolls (3.0 cr)
- RELS 5204 - The Dead Sea Scrolls (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 - Ancient Rome: Kings and Consuls (3.0 cr)
- CNES 3105 - Ancient Rome: The Age of Augustus (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 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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 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 - Introduction to Roman Law (3.0 cr)
or LAW 6029 - Introduction to Roman Law (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 2018
• 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.

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 bachelor of arts or a minor in communication studies, but not both.

All incoming CLA freshmen must complete the First-Year Experience course sequence.

Introductory Courses
COMM 1101/1101H is recommended.
Take exactly 2 course(s) totaling exactly 6 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)
  or OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [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)

Performative Elective
In order for COMM 3990 to count as a performative elective, it must be taken for at least 3 credits. Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

- COMM 3201 - Introduction to 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 3990 - Research Practicum (1.0 - 3.0 cr)

Additional Communication Studies Electives
At least one elective must be taken at the 4xxx level or higher. The amount of Additional Communication Studies Electives required will depend on the amount of credits taken to fulfill the Performative Elective requirement and the Capstone. Any COMM 3xxx, 4xxx, 5xxx, or its cross-list that is not counting towards a different major requirement may count as an elective.

Take 15 - 18 credit(s) from the following:

**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 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)
  - 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 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 3110 - Topics in Communication Studies (3.0 cr)
  - COMM 3110H - Honors Topics in Communication Studies (3.0 cr)
  - COMM 3341 - Asian American Images [AH, DSJ] (3.0 cr)
  - AAS 3341 - Asian American Images [AH, DSJ] (3.0 cr)

**Directed Study and Research**
Take at most 3 credit(s) from the following:
- COMM 3970 - Directed Study (1.0 - 3.0 cr)
- COMM 3980 - Directed Instruction (3.0 cr)
- 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 4221 - Communication and Popular Music (3.0 cr)
- COMM 4235 - Electronic Media and Ethnic Minorities--A World View (3.0 cr)
- COMM 4245 - Critical Television Studies (3.0 cr)
- COMM 4250 - Environmental Communication [ENV] (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 5250 - Environmental Communication (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 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 5970 - Directed Study (1.0 - 3.0 cr)
• COMM 5994 - Communication Research Practicum (1.0 - 3.0 cr)

Capstone
The Capstone is fulfilled by completing a 10-20 page capstone paper. Students seeking honors in communication studies may fulfill the capstone requirement with the honors thesis. The honors thesis is completed by taking 6 credits of of COMM 3190H, which counts towards the Additional Electives requirement. 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 Paper
Take COMM 3995W concurrently with any COMM 4xxx or 5xxx course. COMM 3995W is taken S-N only and must be taken during the same semester in which the capstone paper is written. The instructor sets the criteria for standards of quality and conceptual/theoretical content. If a capstone project fails to meet guidelines, the student can re-take 3995W in the May-term that most directly follows the failed capstone project.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• COMM 3995W - Major Project [WI] (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:
• 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 3995W - Major Project [WI] (1.0 - 3.0 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 2018
- 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 adviser in 274 Ford Hall.

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

Minor Requirements
A given course may only count towards one minor requirement.

Students may earn a BA or a minor in communication studies, but not both.

Introductory Course
COMM 1101/1101H is recommended.
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)
  or OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [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)

Electives
Any COMM 1xxx, 3xxx, 4xxx, 5xxx, or its cross-list that is not counting towards a different minor requirement may count as an elective. Take 3 or more course(s) totaling 9 or more credit(s) from the following:

COMM 1xxx and 3xxx
Take no more than 2 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 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)
- 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)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>COMM 3601</td>
<td>Introduction to Rhetorical Theory</td>
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<tr>
<td>COMM 3605W</td>
<td>Persuasive Speaking and Speech Writing [WI]</td>
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<td>COMM 3614</td>
<td>Advanced Public Policy and Debate</td>
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<td>Argumentation</td>
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<td>Freedom of Speech [CIV]</td>
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<td>COMM 3635W</td>
<td>Famous Speeches [WI]</td>
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<td>COMM 3676W</td>
<td>Communicating Terrorism [GP, WI]</td>
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<td>COMM 3681W</td>
<td>Rhetorical Fictions and 20th Century Conflicts [LITR, GP, WI]</td>
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<td>COMM 3341</td>
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<td>or AAS 3341</td>
<td>Asian American Images [AH, DSJ]</td>
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<td>Directed Study and Research</td>
<td>Take at most 6 credit(s) from the following:</td>
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<td>Take at most 3 credit(s) from the following:</td>
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<td>• COMM 3970 - Directed Study (1.0 - 3.0 cr)</td>
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<td>• Take at most 3 credit(s) from the following:</td>
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<td>• COMM 3980 - Directed Instruction (3.0 cr)</td>
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<td>• Take at most 3 credit(s) from the following:</td>
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<td>• COMM 3990 - Research Practicum (1.0 - 3.0 cr)</td>
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<td>COMM 4xxx and 5xxx</td>
<td>Take 1 or more course(s) totaling 3 or more credit(s) from the following:</td>
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<td>• COMM 4204 - Producing for Television: Theory and Practice (4.0 cr)</td>
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<td>• COMM 4221 - Communication and Popular Music (3.0 cr)</td>
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<td>• COMM 4263 - Feminist Media Studies [DSJ] (3.0 cr)</td>
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<td>• COMM 4291 - New Telecommunication Media (3.0 cr)</td>
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<td>• COMM 4404W - Language Borderlands [WI] (3.0 cr)</td>
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<td>• COMM 4407 - Communication and Conflict (3.0 cr)</td>
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<td>• COMM 4471 - Communication in Marriage and Family (3.0 cr)</td>
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<td>• COMM 4602W - Contemporary Political Persuasion [WI] (3.0 cr)</td>
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<td>• COMM 4616 - African American Civil Rights Rhetoric (3.0 cr)</td>
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<td>• COMM 4621W - Rhetoric of Feminism [DSJ, WI] (3.0 cr)</td>
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<td>• COMM 5110 - Special Topics in Communication Theory (3.0 cr)</td>
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<td>• COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)</td>
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<td>• COMM 5221 - Media, Race, and Identity (3.0 cr)</td>
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<td>• COMM 5441 - Communication in Human Organizations (3.0 cr)</td>
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<td>• COMM 5451W - Intercultural Communication Processes [WI] (3.0 cr)</td>
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<td>• COMM 5611 - Survey of Rhetorical Theory (3.0 cr)</td>
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<td>• COMM 5615W - Introduction to Rhetorical Criticism [WI] (3.0 cr)</td>
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<td>• COMM 5617 - History and Criticism of U.S. Public Discourse: 1630-1865 (3.0 cr)</td>
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Twin Cities Campus
Comparative U.S. Race and Ethnicity Minor
African-Amer & 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 2018
- 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
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 - American Race Relations [DSJ, WI] (3.0 cr)
  or SOC 3211W - American Race Relations [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)
  or 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 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- CHIC 3223 - Chicana/o and Latin/o Representation in Film [AH, DSJ] (3.0 cr)
- CHIC 3452 - Xicana/Indigena Studies: History, Culture, and Politics [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] (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)
• 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, WI] (4.0 cr)
• AFRO 3864 - African American History: 1619 to 1865 (3.0 cr)
or HIST 3862 - American Immigration History [HIS, DSJ] (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 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
or POL 3701 - American Indian 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 3212 - Chicana Studies: 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 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
or GLOS 3634 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
or HIST 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
• CHIC 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
or HIST 3446 - Chicana/o 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 3752 - Chicanas and Chicanos in Contemporary Society [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)
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 2018
- 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.

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

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)

Computer Science Introductory Core
Option 1 is the recommended sequence. Sequences cannot be mixed and matched. Students who intend to major in Computer Science should take Option 1. Students who have AP credit in computer science will receive credit for CSCI 1103 and must take CSCI 1913 (Option 2). Students who are in other majors and would like to transfer to the computer science program may choose either sequence.

Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:

Option 1
- 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)

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)
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 exactly 6 course(s) totaling exactly 23 credit(s) from the following:
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- CSCI 2021 - Machine Architecture and Organization (4.0 cr)
- CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
  or MATH 4242 - Applied Linear Algebra (4.0 cr)
- CSCI 2041 - Advanced Programming Principles (4.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
  or CSCI 4041H - Algorithms and Data Structures (4.0 cr)
- 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 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
- CSCI 4950 - Senior Software Project (3.0 cr)
- CSCI 4994H - Honors Thesis (1.0 - 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 5204 - Advanced Computer Architecture (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 - Computational Complexity (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 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 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)
• 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 4921 - History of Computing [TS, HIS] (3.0 cr)

**Advanced Project Laboratory, Topics, and Directed Study**

No more than 3 credits from CSCI 4970 or 59xx courses may count toward the elective requirement. CSCI 5996 can not count toward the elective requirement.

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 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)
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 2018
• 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 must have solid analytical and abstraction skills. Students who are not planning on taking calculus should plan to take at least one other math course before starting the minor, such as MATH 1031 or MATH 1051.

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 the computer science advisor in 4-192 Keller Hall 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 Introductory Core
Option 1 is the recommended sequence. Sequences cannot be mixed and matched. Students who have AP credit in computer science will receive credit for CSCI 1103 and must take CSCI 1913 (Option 2).

Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
Option 1

CSCI 1103 - Introduction to Computing and Programming Concepts (4.0 cr)

or CSCI 1103H - Honors Introduction to Computing and Programming Concepts (4.0 cr)

CSCI 1933 - 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
Any CSCI 2xxx, 4xxx, 5xxx may count towards this requirement, except CSCI 2980 & 4921. No CSCI 3xxx courses count towards this requirement. CSCI 49xx & 59xx courses may be accepted, but only with prior advisor approval.

Take exactly 3 course(s) from the following:
Lower-Division Electives
Take 0 - 2 course(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
  Take 1 - 3 course(s) from the following:
  • CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
  • CSCI 4061 - Introduction to Operating Systems (4.0 cr)
  • CSCI 4131 - Internet Programming (3.0 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 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 5403 - Computational Complexity (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 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 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)
  • CSCI 4041 - Algorithms and Data Structures (4.0 cr)
  or CSCI 4041H - Algorithms and Data Structures (4.0 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 5364 - 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 2018
• 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.

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.

At least two minor courses must be completed at the University of Minnesota - Twin Cities campus.

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)
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)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 32 to 34
- 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.

Introductory Courses (1xxx-Level)

Take 2 - 3 course(s) totaling 6 - 11 credit(s) from the following:

Lecture Courses

Lecture Courses have larger enrollments (50-200 students) and give students a broad introduction to general topics studied in CSCL. Take 0 or more course(s) from the following:

- CSCL 1001 - Introduction to Cultural Studies: Rhetoric, Power, Desire [AH, DSJ] (3.0 cr)
- CSCL 1101 - Literature [LITR] (3.0 cr)
• 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)

**Introductory Seminars**
Introductory Seminars are smaller courses (20-25 students) that provide students more one-on-one interaction with instructors and more detailed feedback on their thinking and writing. Lecturing is minimal and active class participation is expected.

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)

**Intermediate Courses (3xxx-Level)**
Intermediate Courses are more advanced courses on specialized topics. Class size ranges from smaller seminars (10-15 students) with increased one-on-one instruction to a some larger lecture courses (50-100 students). Students can take their 5-6 Intermediate Courses from any combination of the subfields below. The number of Intermediate Course credits required will depend on the amount of credits taken towards the Introductory Courses and the Capstone.

Take 5 - 6 course(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 3110 - Basic Concepts of Literary Study (3.0 cr)
• CSCL 3111W - Close Reading [LITR, WI] (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 3175 - Comedy: Text and Theory [AH] (3.0 cr)
• CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3221 - On Television [CIV] (3.0 cr)
• CSCL 3250 - Music as Discourse [AH] (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] (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 [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 3311W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3405 - Marx for Today [AH, DSJ] (3.0 cr)
• CSCL 3412W - Psychoanalysis and Literature Part I: The Essential Freud [WI] (3.0 cr)
• CSCL 3413W - Psychoanalysis and Literature Part II: Post Freudian Criticism [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)

**Directed Study, Internships, and Topics Courses**
Students may count a maximum of 3 directed studies courses, internships, and topics courses toward the major. No more than 2 topics courses may count, and no more than 2 directed studies/internships may count.
Take 0 - 3 course(s) from the following:

**Directed Study/Internship**
For both internships and directed studies, students work with a faculty member of their choice to complete and submit a Faculty/Student Contract outlining the goals and scope of coursework.

Take 0 - 2 course(s) from the following:
- CSCL 3993 - Directed Study (1.0 - 3.0 cr)

**Topics Courses**
Take 0 - 2 course(s) from the following:
- CSCL 3910 - Topics in Cultural Studies and Comparative Literature (3.0 cr)
- CSCL 3910H - Topics in Cultural Studies and Comparative Literature: Honors (3.0 cr)

**Capstone (5xxx-Level)**
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 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 5401 - Origins of Cultural Studies (3.0 cr)
- CSCL 5411 - Avant-Garde Cinema (4.0 cr)
- CSCL 5555 - Introduction to Semiotics (3.0 cr)
- CSCL 5566 - Film Music: Theory, History, Practice (4.0 cr)
- CSCL 5910 - Topics in Cultural Studies and Comparative Literature (3.0 - 4.0 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)

**Honors Thesis**
Honors students completing their thesis in Cultural Studies and Comparative Literature should take the Honors Thesis as one of their two CSCL 5xxx courses. The Honors Thesis should be taken one term prior to graduation.
- CSCL 5944H - Honors Thesis (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:
- 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 [WI] (4.0 cr)
- CSCL 3311W - Theories of Culture [AH, WI] (3.0 cr)
- CSCL 3412W - Psychoanalysis and Literature Part I: The Essential Freud [WI] (3.0 cr)
- CSCL 3413W - Psychoanalysis and Literature Part II: Post Freudian Criticism [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 2018
- 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.

Introductory Courses
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

Lecture Courses
Introductory Lecture Courses are larger courses (50200 students) that give students a broad introduction to general topics studied in CSCL.
Take 0 or more course(s) from the following:
- CSCL 1001 - Introduction to Cultural Studies: Rhetoric, Power, Desire [AH, DSJ] (3.0 cr)
- CSCL 1101 - Literature [LITR] (3.0 cr)
- 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)

Introductory Seminars
Introductory seminars are smaller courses (2025 students) that provide students more one-on-one interaction with instructors and more detailed feedback on their thinking and writing. Lecturing is minimal and active class participation is expected.
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:
- CSCL 3005 - Seminar in Critical Thought (3.0 cr)
- CSCL 3110 - Basic Concepts of Literary Study (3.0 cr)
- CSCL 3111W - Close Reading [LITR, WI] (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)
- CSCL 3175 - Comedy: Text and Theory [AH] (3.0 cr)
- CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
- CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3221 - On Television [CIV] (3.0 cr)
• CSCL 3250 - Music as Discourse [AH] (3.0 cr)
• CSCL 3310W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3311W - Theories of Culture [AH, 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 [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 3405 - Marx for Today [AH, DSJ] (3.0 cr)
• CSCL 3412W - Psychoanalysis and Literature Part I: The Essential Freud [WI] (3.0 cr)
• CSCL 3413W - Psychoanalysis and Literature Part II: Post Freudian Criticism [WI] (3.0 cr)
• CSCL 3910 - Topics in Cultural Studies and Comparative Literature (3.0 cr)
• CSCL 3910H - Topics in Cultural Studies and Comparative Literature: Honors (3.0 cr)
• CSCL 3993 - Directed Study (1.0 - 3.0 cr)
• CSCL 4993 - Directed Study (1.0 - 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 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 - 4.0 cr)
• CSCL 5993 - Directed Study (1.0 - 3.0 cr)
• CSCL 5555 - Introduction to Semiotics (3.0 cr)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
• CSCL 3220W - Screen Cultures [AH, TS] (3.0 cr)
• CSCL 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• HIST 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• HIST 5281 - 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)
• CSCL 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• HIST 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• HIST 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• CSCL 5401 - Origins of Cultural Studies (3.0 cr)
• ENGL 5501 - Origins of Cultural Studies (3.0 cr)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 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 2018
• 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 Technique
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 Studies
DNCE 3901 must be taken for 1 credit.
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 3901 - Career Readiness in Dance (1.0 - 3.0 cr)
• DNCE 4443 - Theorizing Dancing Bodies (3.0 cr)

Dance Performance
DNCE 3700 & 5700 are repeatable up to four times each. DNCE 3701 may only be counted once toward Dance Performance requirements.

Take exactly 2 course(s) totaling exactly 2 credit(s) from the following:
• DNCE 3700 - Performance (1.0 cr)
• DNCE 5700 - Performance (1.0 cr)
• Take no more than 1 course(s) totaling at most 1 credit(s) from the following:
  • DNCE 3701 - Summer Dance Intensive (1.0 - 3.0 cr)

Academic Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:

Dance Studies Electives
Take 2 or more course(s) totaling 6 or more 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 3495 - Dance and Global Tourism [GP] (3.0 cr)
• DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)

General Academic Electives
Other courses in dance or fields related to dance may count here, but must be chosen in consultation with a Dance faculty adviser and approved by the director of Dance.

Take 0 - 1 course(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 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• ANAT 3001 - Human Anatomy (3.0 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 Now [AH, CIV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CSCL 3311W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• DNCE 3334 - Introduction to Dance/Movement Therapy (2.0 cr)
• DNCE 3337 - Body Mind Centering (2.0 cr)
• DNCE 3434 - Nutrition and Body Maintenance for Movement Artists (2.0 cr)
• DNCE 3534 - Introduction to Dance/Movement Therapy (2.0 cr)
• GLOS 3602 - 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 (3.0 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)
  • AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  • SO 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)
  • 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)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  • CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLBT 4403 - Queering Theory (3.0 cr)
  • GLBT 4403 - Queering Theory (3.0 cr)
• GWSS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)

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Information current as of August 24, 2018
Technique Electives
Take 3 or more credit(s) from the following:
• DNCE 1030 - Athletic Movement for Dance (1.0 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 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 1315 - Flamenco (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 1352 - African Diasporic Movement 2 (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 3311 - Contemporary Indian Dance 1 (1.0 cr)
• DNCE 3312 - Contemporary Indian Dance 2 (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:
• AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
• AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• CSCL 3311W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, 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
Dance B.F.A.
Theatre Arts & Dance Dept
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 78 to 83
- 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. Consult the director of dance to find out how this will change your electives requirement. Students may earn a BA or a BFA in dance, but not both.

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
DNCE 5601 must be taken for 2 credits.
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)

Modern/Contemporary Technique
DNCE 1010 and 1020 must be taken for 2 credits each.
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 Dance Technique
Students must complete at least one level 3 and 4 sequence within a given form. The third class must be of different technique, at a level 3 or higher.
Take exactly 3 course(s) totaling exactly 3 credit(s) from the following:
Level 3 & 4 Sequence
Take 2 courses for 2 credits.
  African Diasporic Movement 3 & 4
  DNCE 1353 - African Diasporic Movement 3 (1.0 cr)
  DNCE 1354 - African Diasporic Movement 4 (1.0 cr)
  or Jazz Technique 3 & 4
  DNCE 1210 - Jazz Technique 3 (1.0 cr)
  DNCE 1220 - Jazz Technique 4 (1.0 cr)
  or Tap Technique 3 & 4
  DNCE 3301 - Tap Technique 3 (1.0 cr)
  DNCE 3302 - Tap Technique 4 (1.0 cr)
  or Urban & Street Dance Forms 3 & 4
  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 Dance Technique Elective
A course that counted towards the level 3 & 4 sequence cannot also count for this requirement. 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. DNCE 3700 & 5700 are repeatable up to four times each. DNCE 3701 may only be counted once toward Dance Performance requirements.
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
• DNCE 3700 - Performance (1.0 cr)
• DNCE 5700 - Performance (1.0 cr)
• Take no more than 1 course(s) totaling at most 1 credit(s) from the following:
  • DNCE 3701 - Summer Dance Intensive (1.0 - 3.0 cr)

Dance Studies
DNCE 3901 must be taken for 1 credit. DNCE 5858 must be taken for 3 credits.
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 3901 - Career Readiness in Dance (1.0 - 3.0 cr)
• DNCE 4443 - Theorizing Dancing Bodies (3.0 cr)
• DNCE 5858 - Dance Pedagogy (3.0 - 4.0 cr)

Dance Studies Electives
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 3495 - Dance and Global Tourism [GP] (3.0 cr)
• DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)

Academic 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 1 - 2 course(s) totaling 3 - 4 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 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
• ANAT 3001 - Human Anatomy (3.0 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 Now [AH, CIV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (3.0 cr)
• CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CSCL 3311W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3351W - The Body and the Politics of Representation [HIS, 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 3495 - Dance and Global Tourism [GP] (3.0 cr)
• DNCE 5234 - Introduction to Dance/Movement Therapy (2.0 cr)
• DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)
• GLOS 3602 - 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 (3.0 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 [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)
• CSCL 3350W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• or GLBT 3450W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLBT 4403 - Queering Theory (3.0 cr)
• or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (3.0 cr)
• or GLOS 3145H - 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)

Technique 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. 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 credit(s) from the following:
- DNCE 1030 - Athletic Movement for Dance (1.0 cr)
- 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 1315 - Flamenco (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 1349 - Contact Improvisation (1.0 cr)
- DNCE 1351 - African Diasporic Movement 1 (1.0 cr)
- DNCE 1352 - African Diasporic Movement 2 (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 3311 - Contemporary Indian Dance 1 (1.0 cr)
- DNCE 3312 - Contemporary Indian Dance 2 (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 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- CSCL 3311W - Theories of Culture [AH, WI] (3.0 cr)
- CSCL 3351W - The Body and the Politics of Representation [HIS, 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)
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 2018
- 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 one 1xxx-level course (4 credits) may count towards the minor.
No more than 8 credits may be earned from a single department.

Students completing a Journalism major may only count one JOUR course (3 credits) towards the digital media studies minor. As a result, journalism majors must complete four elective courses (12 credits) to complete the required minimum of 15 credits for the minor.

Media Studies/Journalism Core
Journalism majors may only count one JOUR course (3 credits) towards the digital media studies minor.
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 - Internet and Global Society [GP] (3.0 cr)
- JOUR 4272 - Digital Advertising: Theory and Practice (3.0 cr)
- JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
- JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)

Electives
Other electives may be chosen only if they represent new courses offered that are similar to those on the approved list. Approval of alternative electives for the minor is done by submitting a petition to 110 Murphy Hall.

Journalism majors must complete four elective courses (12 credits) to complete the required minimum of 15 credits for the minor.
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)
- CSCL 3221 - On Television [CIV] (3.0 cr)
- CSCL 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)
- GEOG 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
- GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- GLOS 3143 - Living in the Global [CIV] (3.0 cr)
- HECU 3555W - Making Media & Change: Digital Technologies, Storytelling, and Activism From Consumers to Creators [AH, TS, WI] (4.0 cr)
- HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
- HSCI 3715 - History of Modern Technology: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
- PHIL 4615 - Minds, Bodies, and Machines (3.0 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)
• TH 4556 - Projection Media Design, Creation, and Development (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)
• WRIT 4662W - Writing With Digital Technologies [WI] (3.0 cr)
• ARCH 3611 - Design in the Digital Age (3.0 cr)
  - ARCH 5611 - Design in the Digital Age (3.0 cr)
• ARTS 3760 - Experimental Film and Video (4.0 cr)
  - ARTS 5760 - Experimental Film and Video (4.0 cr)
• ARTS 3770 - Animation (4.0 cr)
  - ARTS 5770 - Animation (4.0 cr)
• HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
  - CSCI 4921 - History of Computing [TS, HIS] (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)
• HIST 1842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
  - HIST 3842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
**Twin Cities Campus**

**Dutch Studies Minor**

*German, Scandinavian, & Dutch*

**College of Liberal Arts**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 15 to 35

The minor allows students to study the language, literature, and culture of the Dutch-speaking Low Countries.

**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 complete 4 semester(s) of Dutch with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

At least one upper-division course 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 director of undergraduate studies.

Take 9 or more credit(s) from the following:

- DTCH 3xxx
- DTCH 5xxx

**Directed Study**

Take no more than 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 2018
- 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 1372 - CSE Calculus II (4.0 cr)
- or MATH 1272 - Calculus II (4.0 cr)
MATH 1572H - Honors Calculus II (4.0 cr)

Physics
Take exactly two 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 four 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 seven 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 one 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 - Planets of the Solar System (3.0 cr)
- ESCI 3093 - Problems in Earth Sciences: Junior (1.0 - 4.0 cr)
- ESCI 3890 - Field Workshop (1.0 cr)
- ESCI 4010 - Undergraduate Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
- ESCI 4093 - Problems in Earth 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 5205 - Fluid Mechanics in Earth and Environmental Sciences (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
• ESCI 5502 - Advanced Structural Geology (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 3006 - Inactive [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)
  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)
• ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
  or ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• ESCI 4503 - Neotectonics (3.0 cr)
  or ESCI 5504W - Neotectonics [WI] (3.0 cr)
• ESCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
  or MATS 5353 - Electron Microprobe Theory and Practice (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)
  or 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)
• ESCI 5504W - Neotectonics [WI] (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 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 2018
• 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.

Introductory Course
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
• or ESCI 1005 - Geology and Cinema [PHYS, ENV] (4.0 cr)
• or ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
• or ESCI 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)

Electives
Any ESCI 2xxx, 3xxx, 4xxx, 5xxx or its cross-list may count towards this requirement.
Take 14 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 - Planets of the Solar System (3.0 cr)
• ESCI 3093 - Problems in Earth Sciences: Junior (1.0 - 4.0 cr)
• ESCI 3890 - Field Workshop (1.0 cr)
• ESCI 4010 - Undergraduate Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• ESCI 4093 - Problems in Earth Sciences: Senior (1.0 - 4.0 cr)
• ESCI 4094 - Senior Thesis (2.0 cr)
• ESCI 4103W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
• ESCI 4103W - Fossil Record of Mammals [WI] (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 5205 - Fluid Mechanics in Earth and Environmental Sciences (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
• ESCI 5502 - Advanced Structural Geology (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• GCC 3004 - The Fracking Boom: Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 3006 [Inactive] [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)
  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)
• ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
  or ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• ESCI 4503 - Neotectonics (3.0 cr)
  or ESCI 5504W - Neotectonics [WI] (3.0 cr)
• ESCI 5353 - Electron Microprobe Theory and Practice (3.0 cr)
  or MATS 5353 - Electron Microprobe Theory and Practice (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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 51 to 57
• Degree: Bachelor of Arts

Economics emphasizes critical thinking and the understanding of basic economic principles. The BA - Quantitative Emphasis adds basic quantitative training (in calculus, linear algebra, and econometrics) and best suits students considering graduate work in business administration.

Students choose from courses in comparative economic systems; economic theory; econometrics; economic development; game theory; industrial organization; cost-benefit analysis; environmental, financial, international, mathematical, monetary, public, and labor economics.

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. All learning abroad or transfer courses must be
approved by the director of undergraduate studies in the Department of Economics.

At least 12 upper-division credits in the major must be taken 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 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
With prior approval of the Director of Undergraduate Studies, one of the following courses may count towards the Electives requirement: MATH 4603, MATH 5615H.

Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
• ECON 3970 - Topics in Economics (3.0 cr)
• ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
• ECON 4311W - Economic Development [WI] (3.0 cr)
• ECON 4317 - The Chinese Economy (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 4731 - Macroeconomic Policy (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)
• ECON 4751 - Financial Economics (3.0 cr)
or ECON 4751H - Honors: Financial Economics (4.0 cr)
• PUBH 6832 is a Masters’ level course. Economics majors with a 3.6 or higher GPA should contact Dr. Simran Sahi about the possibility of signing up for this course.
• ECON 5890 - Economics of the Health-Care System (3.0 cr)
or PUBH 6832 - Economics of the Health Care System (3.0 cr)

Area Study Courses
Only one country/area study course or DUS-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)
• DUS-approved study abroad course

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 0 - 1 course(s) totaling 0 - 6 credit(s) from the following:
Capstone Seminar
ECON 3951 - Major Project Seminar (2.0 cr)
or
Independent Study
In order for the independent study to count for the capstone requirement, students must submit an original paper and receive an A- or better.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• ECON 4993 - Directed Study (1.0 - 4.0 cr)
or
Completion of a paper in a WI economics course
In order for a paper from a writing intensive course to count for the capstone requirement, students must complete an original paper and receive at least 90/100, and submit it to the Capstone Instructor for approval.

or **Honors Thesis**

Take exactly 1 course(s) totaling 3 - 6 credit(s) from the following:

- **ECON 4993H** - Directed Study Honors Thesis (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:

- **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)

Students interested in taking **ECON 4100W** must register concurrently for **ECON 4831** or another Advanced ECON course, and receive permission from the director of undergraduate studies.

- **ECON 4100W** - Undergraduate Writing in Economics [WI] (1.0 cr)

*with ECON 4831* - Cost-Benefit Analysis (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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 45 to 52
• Degree: Bachelor of Arts

Economics emphasizes critical thinking and the understanding of basic economic principles. The BA gives students a solid background in economics, is the least quantitative of the three economics majors, and provides excellent preparation for students interested in working immediately after graduation or considering law school.

Students choose from courses in comparative economic systems, economic theory, econometrics, economic development, game theory, industrial organization, cost-benefit analysis, environmental, financial, international, mathematical, monetary, public, and labor economics.

For more information, visit www.econ.umn.edu.

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. All learning abroad or transfer courses must be approved by the director of undergraduate studies in the Department of Economics.

At least 12 upper-division credits in the major must be taken 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)
  - 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)

**Electives**
- With prior approval of the Director of Undergraduate Studies, one of the following courses may count towards the Electives requirement: MATH 4603, MATH 5615H.
- Take exactly 6 course(s) totaling 18 or more credit(s) from the following:
  - ECON 3970 - Topics in Economics (3.0 cr)
  - ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
  - ECON 4211 - Principles of Econometrics (4.0 cr)
  - ECON 4331W - Economic Development [WI] (3.0 cr)
  - ECON 4337 - Comparative Economic Systems (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 4731 - Macroeconomic Policy (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)
  - ECON 4751 - Financial Economics (3.0 cr)
  - ECON 4751H - Honors: Financial Economics (4.0 cr)
  - PUBH 6832 is a Masters’ level course. Economics majors with a 3.6 or higher GPA should contact Dr. Simran Sahi about the possibility of signing up for this course.
  - ECON 5890 - Economics of the Health-Care System (3.0 cr)
  - ECON 5892 - Economics of the Health Care System (3.0 cr)

**Area Study Courses**
- Only one country/area study course or DUS-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)

**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 0 - 1 course(s) totaling 0 - 6 credit(s) from the following:
  - ECON 3951 - Major Project Seminar (2.0 cr)
  - ECON 4993 - Directed Study (1.0 - 4.0 cr)
  - Completion of a paper in a WI economics course
    - In order for a paper from a writing intensive course to count for the capstone requirement, students must complete an original paper and receive at least 90/100, and submit it to the Capstone Instructor for approval.
  - ECON 4993H - Directed Study Honors Thesis (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:

- 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)

Students interested in taking ECON 4100W must register concurrently for ECON 4831 or another Advanced ECON course, and receive permission from the director of undergraduate studies.

- ECON 4100W - Undergraduate Writing in Economics [WI] (1.0 cr)  
  with ECON 4831 - Cost-Benefit Analysis (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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 64 to 68
- Degree: Bachelor of Science

Economics emphasizes critical thinking and the understanding of basic economic principles. The BS is for students interested in graduate study in economics or in a career where quantitative economic analysis plays a significant role. The strong quantitative component in this degree emphasizes multivariate calculus, linear algebra, and econometrics.

Students choose from courses in comparative economic systems, economic theory, econometrics, economic development, game theory, industrial organization, cost-benefit analysis, environmental, financial, international, mathematical, monetary, public, and labor economics.

For more information, visit www.econ.umn.edu.

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
Supporting work in computer science, mathematics, and statistics is recommended.

All study-abroad or transfer courses must be approved by the Director of Undergraduate Studies in the Department of Economics.

At least 12 upper-division credits in the major must be taken 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)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- MATH 4263 - Multivariable Calculus (4.0 cr)
  or MATH 2573H - Honors Calculus III (4.0 cr)
- 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**

With prior approval of the Director of Undergraduate Studies, one of the following courses may count towards the Electives requirement: MATH 4603, MATH 5615H.

Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:

- ECON 3970 - Topics in Economics (3.0 cr)
- ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4337 - Comparative Economic Systems (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 4821 - Public Economics (3.0 cr)
- ECON 4831 - Cost-Benefit Analysis (3.0 cr)
- ECON 4731 - Macroeconomic Policy (3.0 cr)
  or ECON 4738 - Advanced Macroeconomic Policy (4.0 cr)
- ECON 4751 - Financial Economics (3.0 cr)
  or ECON 4751H - Honors: Financial Economics (4.0 cr)
- ECON 4758 - Advanced Financial Economics (4.0 cr)
- ECON 4960 - Topics in Economics (4.0 cr)
  or ECON 4968 - Advanced Topics in Economics (4.0 cr)

**Area Study Courses**

Only one country/area study course or DUS-approved study abroad course may count toward the electives requirement.

Take no more than 1 course(s) from the following:

- 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)

**Advanced Courses**

The Micro/Macro Analysis and Theory courses (ECON 416x) are quarter-long 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 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 4748 - Advanced Quantitative Analysis of the Macroeconomy (4.0 cr)
- ECON 4751H - Honors: Financial Economics (4.0 cr)
- ECON 4758 - Advanced Financial Economics (4.0 cr)
- ECON 4828 - Advanced Public Economics (4.0 cr)
- ECON 4968 - Advanced Topics in Economics (4.0 cr)
• ECON 4161 - Microeconomic Analysis I (2.0 cr)
• ECON 4162 - Microeconomic Analysis II (2.0 cr)
• ECON 4163 - Microeconomic Analysis (2.0 cr)
• ECON 4164 - Microeconomic Analysis (2.0 cr)
• ECON 4165 - Macroeconomic Theory (2.0 cr)
• ECON 4166 - Macroeconomic Theory (2.0 cr)
• ECON 4167 - Macroeconomic Theory (2.0 cr)
• ECON 4168 - Macroeconomic Theory (2.0 cr)
• PUBH 6832 is a Masters' level course. Economics majors with a 3.6 or higher GPA should contact Dr. Simran Sahi about the possibility of signing up for this course.
• ECON 5890 - Economics of the Health-Care System (3.0 cr)
  or PUBH 6832 - Economics of the Health Care System (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:
• 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)
• Students interested in taking ECON 4100W must register concurrently for ECON 4831 or another Advanced ECON course, and receive permission from the Director of Undergraduate Studies.
• ECON 4100W - Undergraduate Writing in Economics [WI] (1.0 cr)
  with ECON 4831 - Cost-Benefit Analysis (3.0 cr)
  or ECON 4xx8 - Advanced Course
Economics Minor

Requirement for this program are current for Fall 2018

Required credits in this minor: 25 to 43

Economics is a useful minor for students majoring in business, engineering, statistics, computer science, mathematics, and all of the social sciences. Minors are available in six subfields: general, economic theory, econometrics, international trade and development, applied microeconomics and monetary theory. All subfields are designed to complement study in other academic disciplines.

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

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 1142 - Short Calculus [MATH] (4.0 cr)
• 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)

Microeconomics

Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

• ECON 3101 - Intermediate Microeconomics (4.0 cr)

Minor Requirements

No substitutions within the sub-plans are permitted.

Only one country/area course may count toward the minor.

At least 9 upper-division ECON credits in the minor must be taken 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.

Program Sub-plans

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

General

Take a total of 9 sub-plan credits.

Electives

Take 3 or more course(s) totaling 9 or more credit(s) from the following:

• ECON 3xxx
•ECON 4xxx
•Country/Area Course
   Take no more than 1 course(s) from the following:
   •ECON 4311 - Economy of Latin America (3.0 cr)
   •ECON 4317 - The Chinese Economy (3.0 cr)
   •ECON 3960 - Topics in Economics: Area Studies (3.0 cr)

Economic Theory
Take a total of 19-20 sub-plan credits.

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 1572H - Honors Calculus II (4.0 cr)
   or MATH 1372 - CSE 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)
   •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)

Economic Theory
Take exactly 2 course(s) totaling 7 - 8 credit(s) from the following:
   •ECON 3102 - Intermediate Macroeconomics (4.0 cr)
   •ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
   or ECON 4731 - Macroeconomic Policy (3.0 cr)

Econometrics
Take a total of 27 sub-plan credits.

Mathematics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
   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)
   •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)

Econometrics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
   •ECON 3102 - Intermediate Macroeconomics (4.0 cr)
   •ECON 4261 - Introduction to Econometrics (4.0 cr)

Theory of Statistics
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
   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)

Directed Study
Take exactly 3 credit(s) from the following:
   •ECON 3993 - Directed Studies (1.0 - 3.0 cr)

International Trade and Development
Take a total of 12-15 sub-plan credits.

International Trade and Development
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
   •ECON 4331W - Economic Development [WI] (3.0 cr)
   •ECON 4337 - Comparative Economic Systems (3.0 cr)

International Economics
Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:

Option 1
- ECON 4401 - International Economics [GP] (3.0 cr)

or Option 2
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4432W - International Finance [WI] (3.0 cr)

International Economics Area of Focus
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ECON 4311 - Economy of Latin America (3.0 cr)
- ECON 4317 - The Chinese Economy (3.0 cr)
- ECON 3960 - Topics in Economics: Area Studies (3.0 cr)
- Study-abroad Course Approved by ECON Director of Undergraduate Studies

Applied Microeconomics
Take a total of 12 sub-plan credits.

Applied Microeconomics
ECON 4211 is recommended, but not required.
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- ECON 4531 - Labor Economics (3.0 cr)
- ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
- Additional ECON 4xxx (3 cr)

Elective
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ECON 4821 - Public Economics (3.0 cr)
- ECON 4831 - Cost-Benefit Analysis (3.0 cr)

Monetary Theory
Take a total of 17 sub-plan credits.

Monetary Theory
Take exactly 5 course(s) totaling exactly 17 credit(s) from the following:
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
- ECON 4721 - Money and Banking (3.0 cr)
- ECON 4731 - Macroeconomic Policy (3.0 cr)
- ECON 4751 - Financial Economics (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (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 2018
- 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 (3.0 cr)
- ENGL 3114 - Dreams and Dream Visions (3.0 cr)
- ENGL 3116 - Early Modern Drama (3.0 cr)
- ENGL 3132 - The King James Bible as Literature (3.0 cr)
- ENGL 3133 - Stuart England: 17th-Century Language and Culture (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 3175 - 20th-Century British Literatures and Cultures I (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 British Novel (3.0 cr)
- ENGL 4233 - Modern and Contemporary Drama (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 3110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
or ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
or ENGL 3161H - Honors: Victorian Literatures and Cultures (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, 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] (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 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 3010** - Studies In Poetry (3.0 cr)
- **ENGL 3013** - Poems about Cities (3.0 cr)
- **ENGL 3021** - Captivity in Literature and Film: From the Barbary Coast to Guantanamo Bay (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 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 3060** - Studies in Literature and the Other Arts (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 (3.0 cr)
- **ENGL 3116** - Early Modern Drama (3.0 cr)
- **ENGL 3132** - Stuart England: 17th-Century Literature and Culture (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 3175** - 20th-Century British Literatures and Cultures I (3.0 cr)
- **ENGL 3180** - Contemporary 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 3330** - Gay, Lesbian, Bisexual, and Transgender Literature (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 3771** - Literary Magazine Production Lab I (4.0 cr)
- **ENGL 3772** - Literary Magazine Production Lab II (4.0 cr)
- **ENGL 3791** - Literary and American Cultural Diversity [DSJ] (4.0 cr)
- **ENGL 4003** - History of Literary Theory (3.0 cr)
- **ENGL 4090** - General Topics (1.0 - 4.0 cr)
- **ENGL 4152** - Nineteenth Century British Novel (3.0 cr)
- **ENGL 4233** - Modern and Contemporary Drama (3.0 cr)
- **ENGL 4711** - Introduction to Editing and Publishing (4.0 cr)
- **ENGL 4721** - Electronic Text (3.0 cr)
- **ENGL 4722** - Alphabet to Internet: History of Writing Technologies (3.0 cr)
- **ENGL 5004** - Modern Literary Criticism and Theory (3.0 cr)
- **ENGL 5090** - Readings in Special Subjects (1.0 - 4.0 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 5155** - Readings in Criticism and Theory (3.0 cr)
- **ENGL 5743** - History of Rhetoric and Writing (3.0 cr)
- **ENGL 5790** - 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: 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)
• ENGL 3020 - Studies in Narrative (3.0 cr)
  or ENGL 5020 - Studies in Narrative (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 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
  or ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (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)
• 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 - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
  or AFRO 3592W - Black Women's Life-Writing [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)
• 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 MEST 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, WI] (4.0 cr)
  or AFRO 3598W - Introduction to African American Literature and Culture II [LITR, DSJ, WI] (4.0 cr)
• AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
  or AFRO 5627 - Seminar: Harlem Renaissance (3.0 cr)
• ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
• ENGL 5597 - Seminar: Harlem Renaissance (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)
• 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)
• 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)
  • 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)

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 need to replace the 4 credits with an additional upper-division course.
Take 1 - 2 course(s) totaling exactly 4 credit(s) from the following:
Capstone Seminar in English
ENGL 3960W 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 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)
  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)
- 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 - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
  or AFRO 3592W - Black Women's Life-Writing [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, 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 2018
- 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.

At least two minor courses must be completed at the University of Minnesota - Twin Cities campus.

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 (3.0 cr)
- ENGL 3114 - Dreams and Dream Visions (3.0 cr)
- ENGL 3116 - Early Modern Drama (3.0 cr)
- ENGL 3132 - The King James Bible as Literature (3.0 cr)
- ENGL 3133 - Stuart England: 17th-Century Literature and Culture (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 3175 - 20th-Century British Literatures and Cultures I (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 British Novel (3.0 cr)
• ENGL 4233 - Modern and Contemporary Drama (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 3110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
  or ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
  or ENGL 3161H - Honors: Victorian Literatures and Cultures (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 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)

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:

• 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 3010 - Studies In Poetry (3.0 cr)
• ENGL 3013 - Poems about Cities (3.0 cr)
• ENGL 3021 - Captivity in Literature and Film: From the Barbary Coast to Guantanamo Bay (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 3025 - The End of the World in Literature and History [HIS] (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 3032 - Shakespeare in London (3.0 cr)
• ENGL 3042 - Old English Drama: An Introduction (3.0 cr)
• ENGL 3045 - Cinematic Seductions: Sex, Gender, Desire (3.0 cr)
• ENGL 3060 - Studies in Literature and the Other Arts (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 (3.0 cr)
• ENGL 3116 - Early Modern Drama (3.0 cr)
• ENGL 3132 - The King James Bible as Literature (3.0 cr)
• ENGL 3133 - Stuart England: 17th-Century Literature and Culture (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>ENGL 3134</td>
<td>Milton and Rebellion (3.0 cr)</td>
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<tr>
<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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<tr>
<td>ENGL 3175</td>
<td>20th-Century British Literatures and Cultures I (3.0 cr)</td>
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<tr>
<td>ENGL 3180</td>
<td>Contemporary 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>American Novel from 1900 (3.0 cr)</td>
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<td>ENGL 3231</td>
<td>American Drama (3.0 cr)</td>
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<tr>
<td>ENGL 3330</td>
<td>Gay, Lesbian, Bisexual, and Transgender Literature (3.0 cr)</td>
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<tr>
<td>ENGL 3350</td>
<td>Women Writers (3.0 cr)</td>
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<td>ENGL 3501</td>
<td>Public Discourse: Coming to Terms with the Environment [LITR, ENV] (3.0 cr)</td>
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<tr>
<td>ENGL 3502</td>
<td>Nature Stories: Environmental Discourse in Action [LITR, CIV] (4.0 cr)</td>
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<tr>
<td>ENGL 3505</td>
<td>Protest Literature and Community Action [DSJ] (4.0 cr)</td>
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<td>ENGL 3506</td>
<td>Social Movements &amp; Community Education [CIV] (4.0 cr)</td>
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<td>Analysis of the English Language (4.0 cr)</td>
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<td>Literary Magazine Production Lab I (4.0 cr)</td>
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<tr>
<td>ENGL 3712</td>
<td>Literary Magazine Production Lab II (4.0 cr)</td>
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<td>ENGL 3741</td>
<td>Literary and American Cultural Diversity [DSJ] (4.0 cr)</td>
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<td>ENGL 4003</td>
<td>History of Literary Theory (3.0 cr)</td>
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<td>ENGL 4090</td>
<td>General Topics (1.0 - 4.0 cr)</td>
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<td>ENGL 4152</td>
<td>Nineteenth Century British Novel (3.0 cr)</td>
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<td>Modern and Contemporary Drama (3.0 cr)</td>
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<td>ENGL 4711</td>
<td>Introduction to Editing and Publishing (4.0 cr)</td>
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<td>ENGL 4721</td>
<td>Electronic Text (3.0 cr)</td>
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<td>ENGL 4722</td>
<td>Alphabet to Internet: History of Writing Technologies (3.0 cr)</td>
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<td>ENGL 5040</td>
<td>Theories of Film (3.0 cr)</td>
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<td>ENGL 5090</td>
<td>Readings in Special Subjects (1.0 - 4.0 cr)</td>
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<tr>
<td>ENGL 5140</td>
<td>Readings in Early Modern Literature and Culture (3.0 cr)</td>
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<tr>
<td>ENGL 5150</td>
<td>Readings in 18th Century Literature and Culture (3.0 cr)</td>
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<td>ENGL 5510</td>
<td>Readings in Criticism and Theory (3.0 cr)</td>
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<td>ENGL 5743</td>
<td>History of Rhetoric and Writing (3.0 cr)</td>
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<td>ENGL 5790</td>
<td>Topics in Rhetoric, Composition, and Language (3.0 cr)</td>
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<td>ENGL 5805</td>
<td>Writing for Publication (3.0 cr)</td>
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<td>ENGW 3102</td>
<td>Intermediate Fiction Writing (3.0 cr)</td>
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<td>ENGW 3104</td>
<td>Intermediate Poetry Writing (3.0 cr)</td>
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<td>ENGW 3106</td>
<td>Intermediate Literary Nonfiction Writing (3.0 cr)</td>
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<td>ENGW 3110</td>
<td>Topics in Creative Writing (3.0 cr)</td>
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<td>ENGW 4205</td>
<td>Screenwriting (3.0 cr)</td>
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<td>ENGW 5102</td>
<td>Graduate Fiction Writing (4.0 cr)</td>
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<tr>
<td>ENGW 5104</td>
<td>Graduate Poetry Writing (4.0 cr)</td>
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<td>ENGW 5106</td>
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<td>ENGW 5130</td>
<td>Topics: Graduate Creative Writing (4.0 cr)</td>
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<td>ENGW 5310</td>
<td>Reading as Writers (4.0 cr)</td>
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<td>ENGL 3006W</td>
<td>Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)</td>
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<td>Honors: Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)</td>
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<td>ENGL 3020</td>
<td>Studies in Narrative (3.0 cr)</td>
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<td>ENGL 5020</td>
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<td>ENGL 3101</td>
<td>Survey of Medieval English Literature (3.0 cr)</td>
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<tr>
<td>ENGL 3102</td>
<td>Chaucer (3.0 cr)</td>
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<td>MEST 5110</td>
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<td>Victorian Literatures and Cultures (3.0 cr)</td>
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<td>ENGL 3161H</td>
<td>Honors: Victorian Literatures and Cultures (3.0 cr)</td>
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<td>ENGL 3201W</td>
<td>American Indian Literature [LITR, DSJ, WI] (3.0 cr)</td>
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<td>AMIN 3201W</td>
<td>American Indian Literature [LITR, DSJ, WI] (3.0 cr)</td>
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<td>ENGL 3301</td>
<td>Asian America through Arts and Culture [AH, DSJ] (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>ENGL 3303W</td>
<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)</td>
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<tr>
<td>AAS 3303W</td>
<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)</td>
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</table>
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 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
or AFRO 3592W - Black Women's Life-Writing [LITR, DSJ, WI] (3.0 cr)
• ENGL 3593 - The African American Novel (3.0 cr)
or AFRO 3593 - 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, 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 Geosciences Minor

Program Type: Undergraduate minor related to major
Requirements for this program are current for Fall 2018
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

Preparatory Courses
Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- EShi 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
- EShi 1003 - Dinosaurs and Our World [BIOL, ENV] (4.0 cr)
- EShi 1005 - Geology and Cinema [PHYS, ENV] (4.0 cr)
- EShi 1006 - Oceanography [PHYS, ENV] (4.0 cr)
- EShi 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)
- EShi 1012 - Natural Hazards and 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:
- EShi 2201 - Solid Earth Dynamics (4.0 cr)
- EShi 2202 - Earth History (4.0 cr)
- EShi 2203 - Earth Surface Dynamics (4.0 cr)
- EShi 2301 - Mineralogy (3.0 cr)
- EShi 2302 - Petrology (3.0 cr)
- EShi 3004 - Water and Society [ENV] (3.0 cr)
- EShi 3006 - Earth Resources (3.0 cr)
- EShi 3006 - Planets of the Solar System (3.0 cr)
- EShi 3202 - Fluid Earth Dynamics (4.0 cr)
- EShi 3303W - Geochemical Principles [WI] (4.0 cr)
- EShi 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
- EShi 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
- EShi 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- EShi 4203 - Environmental Geophysics (3.0 cr)
- EShi 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
- EShi 4211 - Solid Earth Geophysics I (3.0 cr)
- EShi 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 5205 - Fluid Mechanics in Earth and Environmental Sciences (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aqueous Systems (3.0 cr)
• ESCI 5502 - Advanced Structural Geology (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (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 4503 - Neotectonics (3.0 cr)
  or ESCI 5504W - Neotectonics [WI] (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:

• ANTH 3041 - Ecological Anthropology (3.0 cr)
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ESCI 4701 - Geomorphology (4.0 cr)
• GLOS 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
  or SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
Twin Cities Campus

Finnish Minor
German, Scandinavian, & Dutch
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 15 to 35

The minor allows students to study the language, literature, and culture of Finland and the other Nordic countries.

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 one upper-division course 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:
- FIN 3xxx
- FIN 5xxx
- SCAN 3xxx
- SCAN 4xxx
- SCAN 5xxx
- Directed Study
Take no more than 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 2018
• 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 - Saints and Soldiers of Medieval France [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 - The Idea of Paris: Writing and Viewing the City [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 - Old French in Action: Medieval French Language through Songs, Tales, and Plays (3.0 cr)
- FREN 3611 - Speaking of Love in Medieval France: Stories, Songs, and Letters [LITR, GP] (3.0 cr)
- FREN 3612 - Reading Libertinism [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 2018
• 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 5xxx

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 - Ancient Rome: Kings and Consuls (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 - Topics in 19th Century Italy (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 - Topics in Italian Cinema (3.0 cr)
• ITAL 4307 - Novellistica (3.0 cr)
• ITAL 4970 - Directed Readings (1.0 - 4.0 cr)
• ITAL 5401 - Mondo di Dante (4.0 cr)
• ITAL 5609 - World of Dante (4.0 cr)
• ITAL 5640 - Topics in Italian Studies (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)
• ARTH 3706 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
• ARTH 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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 5203 - Italian Travelers: From the Enlightenment to the Present (3.0 cr)
• 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:

- FRIT 3600 - The Renaissance (3.0 cr)
- FRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
- FRIT 3880 - Topics in French and Italian Literatures and Cultures (3.0 cr)
- FRIT 5850 - Topics in French and Italian Cinema (3.0 cr)

**Capstone**

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.

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.
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 (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 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:

- 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 2018
- 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 2018
• 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
Introductory 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)
- GWSS 4004 - Queering Desire (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. SOC 4090 meets the requirement only if the topic is sociology of sexuality. Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
- ENGL 3330 - Gay, Lesbian, Bisexual, and Transgender Literature (3.0 cr)
- FSOS 4152 - Gay, Lesbian, Bisexual and Transgender People in Families (3.0 cr)
- GLBT 3610 - Topics in GLBT Studies (3.0 cr)
- SOC 4090 - Topics in Sociology (3.0 cr)
- GLBT 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] (0.0 - 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)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 to 35
- 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.

Introductory 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 - 4.0 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)
- 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)
- GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
  or GWSS 1007 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)

Feminist 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)
Electives
At least 3 electives courses must be at the 4xxx or 5xxx level.
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 (2.0 cr)
- GWSS 3215 - Bodies That Matter: Feminist Approaches to Disability Studies [DSJ] (3.0 cr)
- GWSS 3290 - Topics (1.0 - 3.0 cr)
- GWSS 3301W - Women Writers [LITR, WI] (3.0 cr)
- GWSS 3302 - Women and the Arts [AH, DSJ] (3.0 cr)
- GWSS 3303W - Gender and Global Politics [SOCS, GP] (3.0 cr)
- GWSS 3303W - Transgender Health (2.0 cr)
- GWSS 3505W - Girls, Girihood, and Resistance [WI] (3.0 cr)
- GWSS 3505W - Girls, Girihood, and Resistance [WI] (0.0 - 3.0 cr)
- GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
- GWSS 3590 - Topics: Social Change, Activism, Law, and Policy Studies (3.0 cr)
- GWSS 3993 - Directed Study (1.0 - 12.0 cr)
- GWSS 3994 - Directed Research (1.0 - 12.0 cr)
- 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 3004W - Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)
- GWSS 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)
- GWSS 4303W counts below as a 4xxx-level course
- GWSS 3305 - Queer Cinema [AH] (3.0 cr)
- GLBT 3305 - Queer Cinema [AH] (3.0 cr)
- GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
- GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
- 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 3410 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
- CHIC 3212 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
- AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
- AMIN 5409 counts below as a 5xxx-level course
- GWSS 3419 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
- HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
- GLOS 3934 - Women and Gender in Latin American History [GP, HIS] (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)
- GLBT 3502 - Transgender Studies Now [DSJ] (0.0 - 3.0 cr)
- GWSS 3502 - Transgender Studies Now [DSJ] (3.0 cr)
- GWSS 3505W - Girls, Girihood, and Resistance [WI] (3.0 cr)
- GWSS 3505V - Girls, Girihood, and Resistance [WI] (0.0 - 3.0 cr)
- GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
- HIST 3549 - 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)

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)
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 4 credits with undergraduate GWSS coursework to reach the minimum credits required for the major.

Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
- GWSS 4108 - Senior Seminar: Writing (1.0 cr)
- Take 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)
- GWSS 3002W - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
- GWSS 3004W - Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)
- GWSS 3004W - Honors: Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)
- GWSS 3102W - Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
- GWSS 3102W - Honors: Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)
- AAS 3303W - 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 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
- 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)
- GWSS 3505W - Girls, Girlhood, and Resistance [WI] (3.0 cr)
- GWSS 3505W - 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 2018
- 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.

**Introductory 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 - 4.0 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)
- **GLBT 1001** - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
  or **GWSS 1007** - Introduction to GLBT Studies [DSJ, SOCS] (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)

**Electives**

Take 15 or more credit(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 (2.0 cr)
- **GWSS 3215** - Bodies That Matter: Feminist Approaches to Disability Studies [DSJ] (3.0 cr)
- **GWSS 3290** - Topics (1.0 - 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 3590** - Topics: Social Change, Activism, Law, and Policy Studies (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 4004** - Queering Desire (3.0 cr)
- **GWSS 4108** - Senior Seminar: Writing (1.0 cr)
- **GWSS 4390** - Topics: Visual, Cultural, and Literary Studies (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)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>GWSS 5390</td>
<td>Topics: Visual, Cultural, and Literary Studies</td>
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<td>GWSS 5490</td>
<td>Topics: Political Economy and Global Studies</td>
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<td>GWSS 5993</td>
<td>Directed Study (1.0 - 12.0 cr)</td>
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<td>Directed Instruction (1.0 - 12.0 cr)</td>
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<td>GWSS 5995</td>
<td>Directed Research (1.0 - 8.0 cr)</td>
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<td>GWSS 3002V</td>
<td>Honors: Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)</td>
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<td>GWSS 3004W</td>
<td>Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)</td>
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<td>GWSS 3102W</td>
<td>Feminist Thought and Theory [AH, CIV, WI] (3.0 cr)</td>
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<td>GWSS 3303W</td>
<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)</td>
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<td>Pleasure, Intimacy and Violence (3.0 cr)</td>
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<td>GWSS 3406</td>
<td>Gender, Labor, and Politics [SOCS, GP] (3.0 cr)</td>
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<td>GWSS 3407</td>
<td>Women in Early and Victorian America: 1600-1890 [HIS, DSJ] (3.0 cr)</td>
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<td>GWSS 3408</td>
<td>Women in Modern America (3.0 cr)</td>
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<td>GWSS 3409W</td>
<td>Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)</td>
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<td>GWSS 3410</td>
<td>Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)</td>
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<td>GWSS 3413</td>
<td>Women and Gender in Latin American History [GP, HIS] (3.0 cr)</td>
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<td>Gay, Lesbian, Bisexual and Transgender Social Movements in the United States (3.0 cr)</td>
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<td>GWSS 3505W</td>
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<td>Transnational Feminist Theory [GP] (3.0 cr)</td>
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<td>GWSS 5204</td>
<td>Sex, Love, &amp; Disability (3.0 cr)</td>
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<td>GWSS 4401</td>
<td>Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)</td>
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<td>GWSS 4403</td>
<td>Queering Theory (3.0 cr)</td>
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<td>AFRO 4406</td>
<td>Black Feminist Thought (3.0 cr)</td>
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<td>Black Feminist Thought in the American and African Diasporas (3.0 cr)</td>
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<td>GWSS 5406</td>
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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 2018
- 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 5715 - From GPS and Virtual Globes to Spatial Computing (3.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
  or CSCI 4041H - Algorithms and Data Structures (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 Remote Sensing and Resource Survey (2.0 cr)
• FNRM 5412 - 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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 32 to 39
• Degree: Bachelor of Arts

Geography focuses on the integrated study of our increasingly connected world, shaped by the interactions between cultural and biophysical forces. The major synthesizes approaches widely used in the humanities, social, biophysical, and digital information sciences. Geography is uniquely poised to investigate combinations of social, political, economic, and ecological processes - especially the role of space, place, and geographic networks in shaping these processes and interactions. Geography attempts to interpret not just these phenomena, but also, how they are perceived and what meanings they hold. Such an integrative perspective on global, regional, and local change provides students with a singular understanding of today's complex world.

Depending on their specific interests, geographers employ one or more research techniques, including field observation, legal and archival analysis, interviewing, textual analysis, ethnography, mapping, spatial statistics, and computer and econometric modeling. Many geographers are interested in the intersections of science, technology, and information, such as the application and evaluation of geographic information science on decision-making. All geography undergraduates are trained to be interdisciplinary to be better prepared to address some of the world’s most pressing problems including climate change, inequity, population growth, natural resource use and perception, and economic challenges.

Students earning a degree in geography are well-prepared to pursue a wide range of career opportunities due to a strong foundation of interdisciplinary education and training. Students in geography are required to engage in course work in the three primary subfields of the discipline: cultural patterns, environmental processes and global change, and geographic information and mapping sciences. The geography program emphasizes critical thinking and writing skills, fosters the development of effective teamwork skills, and focuses on creative approaches to problem-solving.

Geographers have a broad range of career opportunities. Federal, regional, and local governmental agencies seek geographers for city and regional planning, natural resource management, law enforcement, and transportation positions. Private industry consulting, environmental and marketing firms, the non-profit sector, and local, national, and transnational non-governmental organizations seek geographic skills including geographic information sciences and spatial analytical techniques. Many Geography undergraduate majors obtain careers in education and many go on to graduate school.

The BA degree offers a challenging and solid foundation in the theory and practice of geography, with the flexibility needed to specialize in particular areas of student interest. Geography undergraduates are encouraged to tailor individual programs to meet their interests and goals.

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.

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.

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**

Breadth courses expose students to geography sub-fields. Students may count ONLY one 1xxx course 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] (4.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
- GEOG 3973 - Geography of the Twin Cities [SOCS] (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)
- 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)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, 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] (4.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
- GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
- ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 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 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
- GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- GEOG 3541 - Principles of Geocomputing (3.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 5551 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- 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. Courses counting as electives must be worth three or four credits each. In some circumstances, students may substitute 2 two-credit courses for one of the electives. Students may petition to take GIS courses when prerequisites have been fulfilled. Note that the following URBS courses may not count as electives: 1001W, 3001W, 3201, 3202, 3500, & 3955W.

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 3211 - East Asia (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
- GIS 5555 - Basic Spatial Analysis (3.0 cr)
- GEOG 3377 - Political Ecology of North America [ENV] (3.0 cr)
- GEOG 3378 - Music in the City [DSJ, AH] (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] (4.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
- GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- GEOG 3541 - Principles of Geocomputing (3.0 cr)
- GEOG 3559 - Introduction to Dendrochronology (3.0 cr)
- GEOG 3900 - 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 (3.0 cr)
- GEOG 5363 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5365 - 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 5578 - GIS Programming (3.0 cr)
- URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (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 GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
  or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
- GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
  or GLOS 3921 - Europe: A Geographic Perspective [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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 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)
- 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)
Capstone

The Capstone is a process that 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)
- or GEOG 3996H - Honors: 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)
- or GEOG 3997H - Honors: 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] (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)
- URBS 3301W - American Cities As Settings for Cultural Diversity [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 3374W - The City in Film [AH, WI] (4.0 cr)
- or GEOG 3374V - Honors: The City in Film [AH, WI] (4.0 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 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 44 to 59
- Degree: Bachelor of Science

Geography focuses on the integrated study of our increasingly connected world, shaped by the interactions between cultural and biophysical forces. The major synthesizes approaches widely used in the humanities, social, biophysical, and digital information sciences. Geography is uniquely poised to investigate combinations of social, political, economic, and ecological processes - especially the role of space, place, and geographic networks in shaping these processes and interactions. Geography attempts to interpret not just these phenomena, but also, how they are perceived and what meanings they hold. Such an integrative perspective on global, regional, and local change provides students with a singular understanding of today's complex world.

Depending on their specific interests, geographers employ one or more research techniques, including field observation, legal and archival analysis, interviewing, textual analysis, ethnography, mapping, spatial statistics, and computer and econometric modeling. Many geographers are interested in the intersections of science, technology, and information, such as the application and evaluation of geographic information science on decision-making. All geography undergraduates are trained to be interdisciplinary to be better prepared to address some of the world's most pressing problems including climate change, inequity, population growth, natural resource use and perception, and economic challenges.

Students earning a degree in geography are well-prepared to pursue a wide range of career opportunities due to a strong foundation of interdisciplinary education and training. Students in geography engage in coursework in the three primary subfields of the discipline: cultural patterns, environmental processes and global change, and geographic information and mapping sciences. Students pursuing the BS degree may also pursue the Geographic Information Sciences track emphasizing spatial and quantitative analysis skills.

Geographers have a broad range of career opportunities. Federal, regional, and local governmental agencies seek geographers for city and regional planning, natural resource management, law enforcement, and transportation positions. Private industry consulting, environmental and marketing firms, the non-profit sector, and local, national, and transnational non-governmental organizations seek geographic skills including geographic information sciences and spatial analytical techniques. Many Geography undergraduate majors obtain careers in education and many go on to graduate school.

The BS degree offers a challenging and solid foundation in the theory and practice of geography, with the flexibility needed to specialize in particular areas of student interest. Geography undergraduates are encouraged to tailor their individual programs to meet their needs and goals.

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 is a process that 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)
• 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)
• GEOG 3996H - Honors: 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)
• GEOG 3997H - Honors: 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] (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)
• URBs 3955W - Senior Paper Seminar [WI] (2.0 cr)
• URBs 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GEOG 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
• GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
• GEOG 3985W - Senior Project Seminar [WI] (4.0 cr)
• 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
Breadth courses expose students to geography sub-fields. Students may count ONLY one 1xxx course toward the breadth requirement.

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] (4.0 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)
• Geography of the Twin Cities
  • GEOG 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
  or GEOG 3973 - Geography of the Twin Cities [SOCS] (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)
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] (4.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (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)
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 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
• GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 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 5561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)
Supporting Courses
Note: Some courses require prerequisites. For more information consult the university catalog, or contact the department offering the course directly.
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:
  • BIOL 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  • EPSY 5261 - Introductory Statistical Methods (3.0 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)
  • GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)

• Intermediate & Advanced Statistics
  Take 0 - 2 course(s) from the following:
  • ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 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)
  • 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)
  • 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 - Scientific Reasoning (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)
  • 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)

• Physical Sciences
  Take 0 - 3 course(s) from the following:
  • BIOC 3021 - Biochemistry (3.0 cr)
  • 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)
  • 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 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 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)
  • ESCL 3002 - Climate Change and Human History [ENV] (3.0 cr)
  • ESCL 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
  • SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
  • ESCL 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
  or ESCL 1101 - Introduction to Geology [ENV] (3.0 cr)
  • ESCL 1006 - Oceanography [PHYS, ENV] (4.0 cr)
  or ESCL 1106 - Oceanography [ENV] (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)
• GCD 3033 - Principles of Cell Biology (3.0 cr)
• BIO 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
  or BIO 1001H - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
• BIO 1009 - General Biology [BIOL] (4.0 cr)
  or BIO 1009H - Honors: General Biology [BIOL] (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)
• BIOL 4003 - Genetics (3.0 cr)
  or GCD 3022 - Genetics (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 3407 - Ecology (3.0 cr)
  or EEB 3807 - Ecology (4.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
  or EEB 3811 - Introduction to Animal Behavior (4.0 cr)

Electives

Students should work with the departmental advisor to develop a coherent set of electives that meet specific educational goals. Courses counting toward the electives requirements must be worth three or four credits each. In some circumstances, students may substitute 2 two-credit courses for one of the electives. At least 9 of the 15 elective credits must be from the list of Environmental Geography & Geographic Information Sciences Electives.

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] (4.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
- GEOG 5426 - Climatic Variations (3.0 cr)
- URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)

Geographic Information Sciences Electives

Take 0 - 5 course(s) from the following:
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3553 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GIS 6555 - Basic Spatial Analysis (3.0 cr)
- GIS 5571 - ArcGIS 1 (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 3561 - 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 3211 - East Asia (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, TS] (4.0 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 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 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
- GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- GEOG 3900 - 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 3301W - American Cities As Settings for Cultural Diversity [WI] (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 GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
or RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
or GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GEOG 3311 - 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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
or GEOG 5374 - The City in Film (4.0 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)

Geographic Information Science

This sub-plan meets federal STEM program requirements.

Where does geographic information come from? How can science and society make use of such information? How can geographic information science contribute to urban development and environmental studies? This sub-plan exposes students to a range of applications, including land use and land cover change, environmental justice, mobility studies, transportation improvements, urban, regional and environmental planning, resource conservation, society-technology relations, cyberGIS, and big data analytics.

Breadth Requirement

Breadth courses expose students to geography sub-fields. Students may count ONLY one 1xxx course toward the breadth requirement.

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] (4.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, 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 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)

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] (4.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (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)

Geographic Information Science

Take exactly 2 course(s) totaling exactly 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)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

Supporting Courses

Note: Some courses require prerequisites. For more information consult the university catalog, or contact the department offering the course directly. Take 3 of the 4 required Supporting Courses from the following course groups: Mathematics, Basic Statistics, Intermediate & Advanced Statistics, and Programming and Logic.

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)
• MATH 2574H - Honors Calculus IV (4.0 cr)

Basic Statistics
Take 0 - 1 course(s) from the following:
• BIOL 3272 - Applied Biostatistics (4.0 cr)
• EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
• EPSY 5261 - Introductory Statistical Methods (3.0 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)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)

Intermediate & Advanced Statistics
Take 0 - 2 course(s) from the following:
• ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 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)
• 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)
• 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 - Scientific Reasoning (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)
• CSCI 1133 - 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)

Physical Sciences
Take 0 - 1 course(s) from the following:
• BIOC 3021 - Biochemistry (3.0 cr)
• 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)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
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 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 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)
- ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
- ESCI 3402 - Science and Politics of Global Warming [ENV] (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 [ENV] (3.0 cr)
- ESCI 1006 - Oceanography [PHYS, ENV] (4.0 cr)
or ESCI 1106 - Oceanography [ENV] (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 Physiological Ecology (3.0 cr)
- EEB 4611 - Biogeochemical Processes (3.0 cr)
- GCD 3033 - Principles of Cell Biology (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)
- 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)
- ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
or EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
- EEB 3407 - Ecology (3.0 cr)
or EEB 3807 - Ecology (4.0 cr)
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
or EEB 3811 - Introduction to Animal Behavior (4.0 cr)

**Electives**

Students should work with the departmental advisor to develop a coherent set of electives that meet specific educational goals. Courses counting toward the electives requirements must be worth three or four credits each. In some circumstances, students may substitute 2 two-credit courses for one of the electives. At least 9 of the 15 elective credits must be Geographic Information Sciences Electives. One of the Geographic Information Sciences Electives must be taken at the 5xxx level.

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 9 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 3541 - Principles of Geocomputing (3.0 cr)

**Advanced Geographic Information Sciences Electives**

Take 1 - 5 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 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] (4.0 cr)
- GEOG 3423 - Urban Climatology (3.0 cr)
- GEOG 3431 - Plant and Animal Geography (3.0 cr)
- GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
- GEOG 5426 - Climatic Variations (3.0 cr)
- URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)

**Additional Geography Electives**
Take 0 - 2 course(s) totaling at most 8 credit(s) from the following:
- GETS 3101 - Geography of the United States and Canada [SOCIS, TS] (4.0 cr)
- GEOG 3111 - Geography of Minnesota (3.0 cr)
- GEOG 3211 - East Asia (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 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 3386 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
- GEOG 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
- GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- GEOG 3900 - Topics in Geography (3.0 cr)
- GEOG 3973 - Geography of the Twin Cities [SOCIS] (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 3301W - American Cities As Settings for Cultural Diversity [WI] (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 [SOCIS, GP] (3.0 cr)
  or GLOS 3645 - Islamic World [SOCIS, GP] (3.0 cr)
  or RELS 3711 - The Islamic World [SOCIS, GP] (3.0 cr)
- GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
  or GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCIS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCIS, 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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
- GEOG 3537 - The City in Film (4.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCIS, ENV] (3.0 cr)
  or GLOS 3303 - Environment and Development in the Third World [SOCIS, ENV] (3.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCIS, GP, WI] (3.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCIS, GP, WI] (3.0 cr)
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 2018
- Required credits in this minor: 14

Geography minors study how human-made places & natural systems interact and change at local, regional, and global scales. 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.

Minor Courses
Any GEOG 3xxx, 4xxx, 5xxx or its cross-list may count towards this requirement. 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 3211 - East Asia (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 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 3388 - Going Places: Geographies of Travel and Tourism [CIV] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• GEOG 3411W - Geography of Health and Health Care [WI] (3.0 cr)
• GEOG 3423 - Urban Climatology (3.0 cr)
• GEOG 3431 - Plant and Animal Geography (3.0 cr)
• GEOG 3511 - Principles of Cartography (4.0 cr)
• GEOG 3521 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
• GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
• GEOG 3541 - Principles of Geocomputing (3.0 cr)
• GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
• GEOG 3900 - 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 5363 - Rural Landscapes and Environments (4.0 cr)
• GEOG 5401 - Geography of Environmental Systems and Global Change (4.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (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)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
  or GLOS 3921 - Europe: A Geographic Perspective [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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 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)
• 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)
Twin Cities Campus

German Advanced-Level Proficiency Certificate

German, Scandinavian, & Dutch
College of Liberal Arts

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2018
- 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:

- 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 exactly 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

German, Scandinavian, & Dutch

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 16 to 36

The minor in German includes the study of the spoken language, as well as the literature, philology, and culture of Germany, Austria, and Switzerland.

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. Students who place above GER 1001 may take GER 1022 in place of GER 1001 and 1002.

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)
- 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 complete 4 semester(s) of German, with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

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 one upper division course 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 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 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 3993** - Directed Studies (1.0 - 4.0 cr)
• **GER 5011** - Advanced Conversation and Composition (3.0 cr)
• **GER 5410** - Topics in German Literature (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 5993** - Directed Studies (1.0 - 4.0 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 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 3661** - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
  or **GER 5661** - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)

*Directed Study*

Take no more than 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.

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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:
- 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)

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
Students who place above GER 1001 may take GER 1022 in place of GER 1001 and 1002.
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)
- 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) 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
Any DTCH 30xx, FIN 30xx, GER 30xx, 34xx, GER 37xx, GER 57xx, SCAN 57xx, or its cross-list may count towards this requirement.
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 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 3701 - Old Norse Language and Literature (3.0 cr)
• SCAN 3703 - Old Norse Poetry (3.0 cr)
• SCAN 5710 - Topics in Old Norse Literature (3.0 cr)
• SCAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
• SCAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)

Critical Literacy & Global Understanding
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• 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 3655 - 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)
• 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)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
• SCAN 5614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film (3.0 cr)
• SCAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
• SCAN 5634 - Scandinavian Women Writers [GP, LITR] (3.0 cr)
• Study abroad course (requires prior approval from the Director of Undergraduate Studies)

Electives
Any DTCH 3xxx, FIN 3xxx, GER 3xxx, GER 5xxx, SCAN 3xxx, or its cross-list may count towards this requirement. Up to one elective may be taken outside of the GSD department, but must be pre-approved by the departmental advisor or director of undergraduate studies.

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

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Information current as of August 24, 2018
• 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 5011 - Advanced Conversation and Composition (3.0 cr)
• GER 5410 - Topics in German Literature (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 German Literature (3.0 cr)
• GER 5751 - Old Norse Language and Literature (3.0 cr)
• GER 5751 - Old Norse Language and Literature (3.0 cr)
• GER 5752 - Old Norse Language and Literature (3.0 cr)
• GER 5752 - Old Norse Language and Literature (3.0 cr)
• GER 5753 - Old Norse Language and Literature (3.0 cr)
• GER 5753 - Old Norse Language and Literature (3.0 cr)
• GER 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)
• GER 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)
• GER 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (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 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
• GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
• GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
• GER 5651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
• GER 5651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
• GER 5651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
• GER 5651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
• GER/SAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
• GER/SAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
• GER/SAN 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
• GER/SAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
• GER/SAN 5605 - The Scandinavian Short Story [LITR] (3.0 cr)
• GER/SAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
• GER/SAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
• GER/SAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
• GER/SAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
• GER/SAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
• GER/SAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
• GER/SAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
• GER/SAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
• GER/SAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)

**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)
• 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)
• GSD 3451V - Honors Major Project Seminar [WI] (3.0 cr)
• GER/SAN 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)
• GER 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
• GER 3512W - Imagined Communities: German and European, Culture and Controversies, 1700 to Present [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)
• 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 2018
- 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)
• ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
• GEOG 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 - Social Entrepreneurship (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:

  • GLOS 3981W - Major Project Seminar [WI] (3.0 cr)

  • GLOS 3550V - Honors Course: Supervised Research Paper [WI] (4.0 cr)

  • GLOS 3993 - Directed Study (1.0 - 5.0 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)

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)
  • ALL 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
  • ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
  • ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
  • ALL 3441 - Japanese Theater [AH] (3.0 cr)
  • AMST 3113W - Global Minnesota: Diversity in the 21st Century [DSJ, WI] (3.0 cr)
  • ANTHER 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
  • ANTHER 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
  • ANTHER 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 3311W - Theories of Culture [AH, WI] (3.0 cr)
• DNCE 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)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• GEOG 3411W - Geography of Health and Health Care [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)
• PHIL 3001W - 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] (4.0 cr)
• POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
• POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)
• POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
• POL 5092W - International Conflict and Security [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)
• ALL 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)
• ALL 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
  or GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (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)
• 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)
• 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)
• GEOL 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GLOS 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
  or 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)
  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)
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)
- GWSS 3304 - Novels and Nations [LITR, GP] (3.0 cr)

Cultural Production and Everyday Practice Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- ALL 5261 - Work of Translation: Theory, Function, and Practice (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 - Race, Culture, and Vision (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 Borderslands [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 - Oppositional 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)
- 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)
- SOC 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)

Political Economy and Environmental Change Electives
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- ANTH 3041 - Ecological Anthropology (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 interstate relations as well as the ways in which 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 must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the

Human Rights and Justice is a thematic concentration. It must be paired with a regional concentration of your choice.
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)
- GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- GLOS 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- 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 3402 - Human Rights 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 - Social Justice and Community Service [AH, CIV] (4.0 cr)
- POL 3259W - 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 3766 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
- POL 3835 - 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 (4.0 cr)
- POL 4771 - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
- POL 4885W - International Conflict and Security [GP, WI] (4.0 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)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- GLOS 4104 - Crime and Human Rights (3.0 cr)
- GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
- SOC 4104 - Crime and Human Rights (3.0 cr)
- SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
- GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- GLOS 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- JWST 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- SOC 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
- GLOS 4406 - Sociology of International Law: Trafficking, Human Rights, & Business Regulation [GP] (3.0 cr)
- GLOS 4410 - Sociology of Law [WI] (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)

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)
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)

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)
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 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)
• 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)
or 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)
or SOC 3511 - World Population Problems [GP] (3.0 cr)
or 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)
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)
or 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)
• 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)
• 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 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)
• AFRO 3601W - African Literature [LITR, GP, WI] (3.0 cr)
• AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
• AFRO 4105 - Ways of Knowing in Africa and the African Diaspora (3.0 cr)
• ANTH 3020 - Topics in the Anthropology of Africa (3.0 cr)
• FREN 3451 - North African Cinema (3.0 cr)
• FREN 3471 - Topics in Francophone African Literature and Cultures [GP] (3.0 cr)
• 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)
• POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (3.0 cr)

East 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.

East 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:
• 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 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)
• GEOG 3211 - East Asia (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)

Elective Courses

Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• ALL 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
• ALL 3336 - Revolution and Modernity in Chinese Literature and Culture [LITR, GP] (3.0 cr)
• ALL 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
• ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
• ALL 3361W - Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI] (3.0 cr)
• ALL 3371 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
  or EAS 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
  or HIST 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
  or HIST 3479H - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
• ALL 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)
• ALL 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)
• ALL 3456 - Japanese Film [GP] (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 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)
• ALL 3437 - The Japanese Novel [LITR, GP] (3.0 cr)
• ALL 3441 - Japanese Theater [AH] (3.0 cr)
• ALL 3457 - War and Peace in Japan Through Popular Culture (4.0 cr)
  or HIST 3476 - War and Peace in Japan Through Popular Culture (4.0 cr)
• ALL 3458 - Japanese Animation [GP] (3.0 cr)
• ALL 3478 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
  or EAS 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
  or HIST 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
• ALL 3536 - Modern Korean Literature [LITR, GP] (3.0 cr)
• ALL 3556 - Korean Film [AH, GP] (3.0 cr)
• ALL 3586 - Cold War Cultures in Korea (3.0 cr)
• ALL 5446 - Kabuki: A Pop, Queer, and Classical Theater in Japan (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)
• HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
• POL 4473W - Chinese Politics [GP, WI] (3.0 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:
• ANT 4344 - Europe and its Margins (3.0 cr)
• GLOS 4344 - Europe and its Margins (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 - 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
• GLOS 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 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 - War & Revolution in 20th Century Europe: The Question of Gender (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] (4.0 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 - Contemporary Literatures and Cultures (3.0 cr)
• ENGL 4152 - Nineteenth Century British Novel (3.0 cr)
• FREN 3310 - 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)
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:

- ALL 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)
- 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 - Islamist Politics (3.0 cr)
- POL 4477 - Struggles and Issues in the Middle East (4.0 cr)
• POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
• ALL 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
or GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
• ALL 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 HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or RELS 3722 - The Ottoman Empire [HIS, GP] (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)
or RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or RELS 3722 - The Ottoman Empire [HIS, GP] (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)
or RELS 3707W - 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)
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 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 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)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3503 - Ancient Iran (3.0 cr)
or RELS 3709 - Ancient Iran (3.0 cr)
or HIST 3506 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
or RELS 3713 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (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 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)

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)
or 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)
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)
or HIST 3403W - Latin American Politics [HIS, GP] (4.0 cr)
or LAS 3403W - Latin American Politics [HIS, GP] (4.0 cr)
• 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 SPAN 3606 - Human Rights Issues in the Americas (3.0 cr)
or 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 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
• CHIC 3352 - Transnational Chicana/o 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 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SPAN 3512 - Modern Latin America (3.0 cr)
• SPAN 3606 - Migrant Farmworkers 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)
• 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: 1821-1945 [HIS, DSJ] (3.0 cr)
  or GLOS 3634 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (3.0 cr)
  or HIST 3444 - Chicana and Chicano History: 1821-1945 [HIS, DSJ] (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)
• 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)
• 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
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 - Struggles and Issues in the Middle East (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)
• 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:
• ALL 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
• ALL 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 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 - Islamism Politics (3.0 cr)
• POL 4477 - Struggles and Issues in the Middle East (4.0 cr)
• POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
• ALL 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)
• ALL 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)
• ANTH 3021W - Anthropology of the Middle East [SOC, GP, WI] (3.0 cr)
or ANTH 5021W - Anthropology of the Middle East [SOC, GP, WI] (3.0 cr)
or RELS 3707W - Anthropology of the Middle East [SOC, GP, WI] (3.0 cr)
or RELS 3722 - Anthropology of the Middle East [SOC, GP, WI] (3.0 cr)
or RELS 3711 - The Islamic World [SOC, 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 GLO 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 HIST 3503 - Ancient Iran (3.0 cr)
or RELS 3709 - Ancient Iran (3.0 cr)
or HIST 3506 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
or RELS 3713 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (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 3474 - Russian Politics: From Soviet Empire to Post-Soviet State (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)
- 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 3474 - Russian Politics: From Soviet Empire to Post-Soviet State (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)
- 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)
- 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)
- RELS 3611 - Eastern Orthodoxy: History and Culture (3.0 cr)
- HIST 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
- GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
- ALL 3676 - Culture and Society of India [GP, SOCS] (3.0 cr)
- ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
- GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
- GLOS 3969 - 20th Century India (3.0 cr)
- 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:
- ALL 3651 - Ghosts of India [GP] (3.0 cr)
- ALL 3673 - Survey of India: Languages, Literature, and Film [GP] (3.0 cr)
- POL 3431 - Politics of India [GP] (4.0 cr)
- ALL 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)
- ALL 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
- GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
- ALL 3676 - Culture and Society of India [GP, SOCS] (3.0 cr)
- ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
- GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
- GLOS 3969 - 20th Century India (3.0 cr)
- 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 2018
- 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 across the globe.

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 - Other Worlds: Globalization and Culture (3.0 cr)
- GLOS 3609 - Novels and Nations [LITR, GP] (3.0 cr)
  or GWSS 3304 - Novels and Nations [LITR, GP] (3.0 cr)

Political Economy and Environmental Change
Take 0 - 1 course(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)

Human Rights and Justice
Take 0 - 1 course(s) from the following:
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
  or 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:
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)
• ANTH 3020 - Topics in the Anthropology of Africa (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)

• East Asia
Take 0 - 1 course(s) from the following:
• 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 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)
• GEOG 3211 - East Asia (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)

• Europe
Take 0 - 1 course(s) from the following:
• ANTH 4344 - Europe and its Margins (3.0 cr)
or GLOS 4344 - Europe and its Margins (3.0 cr)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
or GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GLOS 3422 - 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (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 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 3724 - War & Revolution in 20th Century Europe: The Question of Gender (3.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
or POL 4461W - European Government and Politics [GP, WI] (4.0 cr)

• Islamic World
Take 0 - 1 course(s) from the following:
• ALL 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)
• 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 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 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)

• Latin America
Take 0 - 1 course(s) from the following:
• ECON 4311 - Economy of Latin America (3.0 cr)
or 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)
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)
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 SPAN 3606 - Human Rights Issues in the Americas (3.0 cr)
or POL 3479 - Latin American Politics [GP] (3.0 cr)
or 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)
• POL 4477 - Struggles and Issues in the Middle East (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)

• Russia
Take 0 - 1 course(s) from the following:
• HIST 3637 - Modern Russia: From Peter the Great to the Present (3.0 cr)
• POL 3474 - Russian Politics: From Soviet Empire to Post-Soviet State (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)

• South Asia
Take 0 - 1 course(s) from the following:
• ALL 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
  or GLOS 3637W - Modern Indian Literature [LITR, GP, WI] (3.0 cr)
• ALL 3676 - Culture and Society of India [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)
• GLOS 3969 - 20th Century India (3.0 cr)
  or HIST 3489 - 20th Century India (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 2018
- 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 - Ancient Rome: Kings and Consuls (3.0 cr)
• CNES 3105 - Ancient Rome: The Age of Augustus (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)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
• CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
• ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• CNES 3505 - 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)
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 2018
• 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 2018
• 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 - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 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 - 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 5204 - The Dead Sea Scrolls (3.0 cr)
  or RELS 3204 - The Dead Sea Scrolls (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 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or JWST 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or RELS 5502 - 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)
  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)
  or RELS 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 3606 - 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)
  or 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)
  or JWST 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
  or POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
- CNES 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
  or JWST 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
  or RELS 5513W - Scripture and Interpretation in Israelite Religion and Judaism [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 2018
- 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 3020
(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 historians 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 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
Take 6 - 9 course(s) from the following:

- HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 - 4.0 cr)
- HIST 3052 - Ancient Civilization: Greece (3.0 cr)
- HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
- HIST 3054 - Egypt of the Pharoahs (3.0 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 3417 - Food in History [HIS, ENV] (3.0 cr)
- HIST 3418 - Drink in History [HIS] (3.0 cr)
- HIST 3426 - Piracy in the Mediterranean: The World of Merchants and Pirates (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 3621 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
- HIST 3626 - Early Modern France: From Old Regime to Empire (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 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 3719 - The Making of Contemporary Europe (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 - War & Revolution in 20th Century Europe: The Question of Gender (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 (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 - Minnesota History (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 - Seminar 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 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 5881 - American Foreign Relations to 1895 (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 3001 - Public History (3.0 cr)
or AMIN 3001 - Public History (3.0 cr)
or AMST 3003 - Public History (3.0 cr)
• HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
or CNES 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• HIST 3067W - Archaeology of Prehistoric Europe [HIS, 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)
• HIST 3081 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr)
or RELS 3544 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr)
• HIST 3082 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
or RELS 3545 - History of Christianity II: From the Middle Ages to the Enlightenment (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)
or MEST 3002 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
• HIST 3211 - History of Sexuality in Europe (3.0 cr)
or GLBT 3211 - History of Sexuality in Europe (3.0 cr)
• HIST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
or GLBT 3212 - Dissident Sexualities in U.S. History (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 3271 - The Viking World: Story, History, and Archaeology (3.0 cr)
or HIST 5271 - The Viking World: Story, History, and Archaeology (3.0 cr)
• HIST 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
or CSCL 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
or CSCL 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• HIST 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
or CSCL 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
or CSCL 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• HIST 3285 - Magic and Medicine (3.0 cr)
or RELS 3625 - Magic and Medicine (3.0 cr)
• HIST 3347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)
or GWSS 3407 - Women in Early and Victorian America: 1600-1890 [HIS, DSJ] (3.0 cr)
• HIST 3348 - Women in Modern America (3.0 - 4.0 cr)
or GWSS 3408 - Women in Modern America (3.0 cr)
• HIST 3349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
or GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (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)
• 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 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
  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 CHIC 3424 - 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 AFRO 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
• HIST 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
  or CHIC 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
• HIST 3454 - West African History: Early Times to 1800 (GP) (3.0 cr)
  or AFRO 3001 - West African History: Early Times to 1800 [GP] (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 AFRO 3120 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
  or EAS 3461 - 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 EAS 3462 - 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 (3.0 cr)
  or ALL 3373 - Religion and Society in Imperial China (3.0 cr)
• HIST 3468 - Social Change in Modern China (3.0 cr)
  or EAS 3468 - Social Change in Modern China (3.0 cr)
• HIST 3469 - History of Women and Family in China, 1600-2000 (3.0 cr)
  or ALL 3372 - History of Women and Family in China, 1600-2000 (3.0 cr)
• HIST 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
  or ALL 3478 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
• HIST 3476 - War and Peace in Japan Through Popular Culture (4.0 cr)
  or ALL 3457 - War and Peace in Japan Through Popular Culture (4.0 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 - 4.0 cr)
  or HIST 5479 - History of Chinese Cities and Urban Life (3.0 - 4.0 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 ALL 3671 - Hinduism (3.0 cr)
• HIST 3493 - Islam: Religion and Culture (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 (3.0 cr)
or AFRO 3864 - African American History: 1619 to 1865 (3.0 cr)
• HIST 3865 - African American History, 1865 to Present (3.0 cr)
or AFRO 3865 - African American History: 1865 to the Present (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 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)
• 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)
• 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 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)
• 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)
• 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)
• 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)

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 facultys 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)
or HIST 4010V - Honors: Research Seminar [WI] (4.0 cr)
or 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)
or 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. Note: HIST 3980W is a one-credit course that must be taken in conjunction with any upper-division (3xxx or higher) HIST course. Instructor permission required, see department for more information.

Take 1 of 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, DSJ] (3.0 cr)
• HIST 3864 - African American History: 1619-1865 (3.0 cr)
• HIST 3865 - African American History, 1865 to Present (3.0 cr)
• HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
• HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
• HIST 3875W - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
• HIST 4010W - Research Seminar [WI] (4.0 cr)
or HIST 4010V - Honors: Research Seminar [WI] (4.0 cr)
or 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)
or HIST 4961V - Honors: Major Paper [WI] (4.0 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 2018
• 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, 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**

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 3052 - Ancient Civilization: Greece (3.0 cr)
• HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
• HIST 3054 - Egypt of the Pharoahs (3.0 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 3417 - Food in History [HIS, ENV] (3.0 cr)
• HIST 3418 - Drink in History [HIS] (3.0 cr)
• HIST 3426 - Piracy in the Mediterranean: The World of Merchants and Pirates (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 3621 - Creating the Modern World in Medieval Europe: The Renaissance, 1200-1600 (3.0 cr)
• HIST 3626 - Early Modern France: From Old Regime to Empire (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 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 3719 - The Making of Contemporary Europe (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 - War & Revolution in 20th Century Europe: The Question of Gender (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 (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 - Minnesota History (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 - 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 5881 - Public History (3.0 cr)
• HIST 5890 - Topics in Latin American History (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 5971 - Readings in U.S. Intellectual History: 19th-20th Centuries (3.0 cr)
• HIST 5981 - Public History (3.0 cr)
• HIST 5990 - Topics in Latin American History (3.0 cr)
• HIST 3001 - Introduction to Medieval History [HIS, GP] (3.0 cr)
• HIST 3002 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
• HIST 3211 - The Viking World: Story, History, and Archaeology (3.0 cr)
• HIST 3212 - Dissident Sexualities in U.S. History (3.0 cr)
• HIST 3264 - 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)
• HIST 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
• HIST 3282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• HIST 3285 - Magic and Medicine (3.0 cr)
• HIST 3347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)
• HIST 3348 - Women in Modern America (3.0 - 4.0 cr)
• HIST 3349 - U.S. Women's Legal History [HiS, DSJ] (3.0 cr)
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<td>Hinduism (3.0 cr)</td>
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or ALL 3671 - Hinduism (3.0 cr)
or ALL 5671 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
or RELS 5671 - Hinduism (3.0 cr)

• HIST 3493 - Islam: Religion and Culture (3.0 cr)
or ALL 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 RELS 3709 - Ancient Iran (3.0 cr)

• HIST 3506 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
or RELS 3713 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (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 GWLS 3643 - Islam and the West (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 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 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

• HIST 3546 - Islam and the West (3.0 cr)
or RELS 3543 - 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 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 3643 - 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 GWLS 3422 - 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)
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)

• 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 3862 - "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)
• 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 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
  or AFRO 3864 - African American History: 1619-1865 (3.0 cr)
• HIST 3865 - African American History, 1865 to Present (3.0 cr)
  or AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
• HIST 3866 - American Immigration History [HIS, DSJ] (3.0 cr)
  or AAS 3866 - American Immigration History [HIS, DSJ] (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 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)
• 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)
• HIST 3875 - Comparative Race and Ethnicity in US History [HIS, DSJ, WI] (3.0 cr)
  or AAS 3875 - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 cr)
• 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)
• 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)
• 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)
• 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)
Twin Cities Campus
History of Science, Technology, and Medicine Minor
CLA Dean's Office
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2018
• Required credits in this minor: 14

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 23714 - Stone Tools to Steam Engines: Technology and History to 1750 [HIS, TS] (3.0 - 4.0 cr)
• HSCI 23715 - History of Modern Technology: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
• HSCI 23814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
• HSCI 23815 - 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)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
• HSCI 5244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• HSCI 5244 - Nature's History: Science, Humans, and the Environment (3.0 cr)

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Information current as of August 24, 2018
• 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 60 to 69
- 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.

Preparatory Courses

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:
- MATH 1272 - Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)
or ANSC 3011 - Statistics for Animal Science (4.0 cr)
or BIOL 3270 - Introduction To Systems Biology (3.0 cr)
or BIOL 3272 - Applied Biostatistics (4.0 cr)
or BIOL 5272 - Applied Biostatistics (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 3003 - Introduction to Computing in Biology (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 SOC 3811 - Social Statistics [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Chemistry Sequence
Take exactly 4 course(s) totaling exactly 8 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)

Physics Sequence
Physics I
Take exactly 1 course(s) totaling 4 - 5 credit(s) from the following:

Physics I
• 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
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)

General Biology
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• BIOL 1009 - General Biology [BIOL] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Core Courses

Organic Chemistry
Organic Chemistry I
Take exactly 2 course(s) totaling exactly 7 credit(s) from the following:
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2311 - Organic Lab (4.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
CHEM 2312H - Honors Organic Lab (5.0 cr)

Organic Chemistry II
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CHEM 2302 - Organic Chemistry II (3.0 cr)
or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

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:
• BIOL 5444 - Muscle (3.0 cr)
or PHSL 3095 - Problems in Physiology (1.0 - 5.0 cr)
or PHSL 4xxx
or PHSL 5xxx

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 4700 - 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 3808H - 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)
• BIOL 4xxx
• BIOL 5444 - Muscle (3.0 cr)
• BIOL 4993 - Directed Studies (1.0 - 6.0 cr)
• BIOL 4994 - Directed Research (1.0 - 6.0 cr)
• CHEM 4xxx
• CSCI 3xxx
• CSCI 4xxx
• GCC 3016 - Grand Challenge: 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 5037 - Psychology of Hearing (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)
• 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 4071** - Race, Culture, and Vision (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)
- **GLOS 3602** - Other Worlds: Globalization and Culture (3.0 cr)
- **GLOSE 3306W** - Medical Anthropology [GP, WI] (3.0 cr)
- **GLOS 3961** - Culture and Society of India [GP, WI] (3.0 cr)
- **GEOG 3381W** - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- **GEOG 3701W** - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- **GEOG 3331** - Geography of the World Economy [SOCS, GP] (3.0 cr)
- **GEOG 3613W** - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- **GEOG 3613V** - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- **GEOG 3681** - Gender and the Family in the Islamic World (3.0 cr)
- **GEOG 3681V** - Honors: Gender and the Family in the Islamic World (3.0 cr)
- **GEOG 4221** - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
- **GEOG 4221V** - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
- **GEOG 4251W** - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- **GEOG 4321W** - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- **CSCL 3350W** - Sexuality and Culture [DSJ, WI] (3.0 cr)
- **CSCL 3356W** - Sexuality and Culture [DSJ, WI] (3.0 cr)
- **GEOG 1301W** - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- **ANTH 1003** - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- **ANTH 1003V** - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- **ANTH 1003W** - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
- **ANTH 1003VW** - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)
- **GEOG 1015W** - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
- **GEOG 1015VW** - Globalization: Issues and Challenges [GP, WI] (4.0 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)
- **POL 1019** - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- **ANTH 1003W** - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
- **ANTH 1003VW** - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)
- **GEOG 1015W** - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
- **GEOG 1015VW** - 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.

Honors students also take PHSL 3062W to fulfill the capstone requirement, and their PHSL 4095H credits will count as either an elective or an advanced physiology elective. Cum Laude and Magna Cum Laude candidates must register for a minimum of 3 credits of PHSL 4095H. Summa Cum Laude candidates must register for a minimum of 4 credits of PHSL 4095H.

**PHSL 3062W**

In 3062W, students write a research review on a physiological topic. Students select an area of focus within the discipline of physiology, and complete a literature review of basic science papers published in the past 10 years in their topic area. All students
will be work with a faculty advisor, who will assist the student in selecting their topic area, refining the focus of their literature review and provide guidance on writing a scientific review article.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:

• PHL 3062W - Research Paper for Physiology Majors [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:

• PHL 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 2018
- 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 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.

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.

**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**
**Italian Studies B.A.**
**French & Italian**
**College of Liberal Arts**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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**

**Prerequisite Courses**
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 (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 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:
Electives

Any ITAL 3xxx, 5xxx or its cross-list that is not counting towards a different major requirement may count as 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 BA when they pertain to Italian studies topics.

Take 8 or more course(s) totaling 24 or more credit(s) from the following:

- ITAL 3104 - Ancient Rome: Kings and Consuls (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 - Topics in 19th Century Italy (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 - Topics in Italian Cinema (3.0 cr)
- ITAL 4307 - Novellistica (3.0 cr)
- ITAL 4970 - Directed Readings (1.0 - 4.0 cr)
- ITAL 5401 - Mondo di Dante (4.0 cr)
- ITAL 5609 - World of Dante (4.0 cr)
- ITAL 5640 - Topics in Italian Studies (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 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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: From the Enlightenment to the Present (3.0 cr)
  or ITAL 5203 - Italian Travelers: From the Enlightenment to the Present (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)
- ITAL 3305 - Staging the Self: Theater and Drama in Modern Italy (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)
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 2018
• Required credits in this minor: 16 to 36

The Italian studies undergraduate minor program examines Italian and Italian American literature, culture, society, and history.

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
Prerequisite Courses
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.

Reading, Conversation, and Composition
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ITAL 3015 - Reading, Conversation, and Composition (4.0 cr)

Electives
Any ITAL 3xxx, 5xxx or its cross-list that is not counting towards a different minor requirement may count as 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 12 or more credit(s) from the following:
• CNES 3104 - Ancient Rome: Kings and Consuls (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 - Topics in 19th Century Italy (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 - Topics in Italian Cinema (3.0 cr)
• ITAL 4307 - Novellistica (3.0 cr)
• ITAL 4970 - Directed Readings (1.0 - 4.0 cr)
• ITAL 5401 - Mondo di Dante (4.0 cr)
• ITAL 5609 - World of Dante (4.0 cr)
• ITAL 5640 - Topics in Italian Studies (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 - Age of St. Augustine of Hippo (3.0 cr)
  or RELS 3541 - Age of St. Augustine of Hippo (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: From the Enlightenment to the Present (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)
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 2018
• 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, Scandinavian & 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. These courses, or equivalent with DUS/HLC approval, must be taken in sequential order. 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. Students with prior knowledge of Biblical or Modern Hebrew should consult the major program adviser for appropriate placement in each sequence. (Note: these courses require prior completion of prerequisite language courses or placement by the major program adviser upon demonstrated proficiency.)

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)

Introductory Course

Take exactly 1 course(s) totaling 3 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)

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)
or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or RELS 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
• CNES 3201 - The Dead Sea Scrolls (3.0 cr)
or RELS 3204 - The Dead Sea Scrolls (3.0 cr)
or CNES 3204 - The Dead Sea Scrolls (3.0 cr)
or RELS 3204 - The Dead Sea Scrolls (3.0 cr)
• 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 RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
• 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 RELS 3504 - Apocalypticism, Cosmic Warfare, and the Maccabees: Jewish Strategies of Resistance in Antiquity (3.0 cr)
• CNES 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
or JWST 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
or RELS 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
• Additional Ancient/Medieval Options
Take 0 or more course(s) from the following:
• JWST 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 RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or CNES 5502 - Ancient Israel: From Conquest to Exile (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)
  or RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)

• Jewish History, Culture, Politics and Society in the Modern World Emphasis Area
Take at least one "Texts & Languages" course, and one additional course from either sub-group of the Ancient and Modern World Emphasis Area. Note: students who have completed the 4th semester, or beyond, of Biblical Hebrew may count a maximum of two of the following courses toward this sub-requirement: HEBR 1001, 1002, 3011 or 3012.
Take 2 or more course(s) from the following:

Texts & Languages
Take 1 or more course(s) from the following:
• HEBR 3090 - Advanced Modern Hebrew (3.0 cr)
• HEBR 5090 - Advanced Modern Hebrew (3.0 cr)
• JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
• JWST 3011 - Jewish American Literature: Toward a Poetics of Diasporic Identity [HIS, DSJ] (3.0 cr)
  or ENGL 3011 - Jewish American Literature: Toward a Poetics of Diasporic Identity [HIS, DSJ] (3.0 cr)
• JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
• JWST 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)
• JWST 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
  or GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
• JWST 3639 - Nazi Germany and Hitler's Europe (3.0 cr)
  or HIST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)
• JWST 3775 - History of Jews in Europe and the Atlantic World, from 1700 to Present (3.0 cr)
  or HIST 3775 - History of Jews in Europe and the Atlantic World, from 1700 to Present (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 SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or GOLS 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or SOC 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• JWST 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
  or POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 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 the 3 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
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.

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)
- POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
- JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- CNES 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
  or JWST 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
  or RELS 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
- JWST 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
  or POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 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 2018
- 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, Scandinavian & 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.

Core Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- JWST 3034 - 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
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)
- RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
- RELS 5013W - Biblical Law and Jewish Ethics [WI] (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)
- JWST 3202 - The 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)
- CNES 3204 - 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 3204 - The Dead Sea Scrolls (3.0 cr)
or RELS 5204 - The Dead Sea Scrolls (3.0 cr)

• JWST 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 RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)

• JWST 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 RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)

• 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 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)
or RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)

• JWST 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
or CNES 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)

• Jewish History, Culture, Politics and Society in the Modern World Emphasis Area

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

• JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)

• POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
• JWST 3011 - Jewish American Literature: Toward a Poetics of Diasporic Identity [HIS, DSJ] (3.0 cr)
or ENGL 3011 - Jewish American Literature: Toward a Poetics of Diasporic Identity [HIS, DSJ] (3.0 cr)

• JWST 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 3013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or JWST 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
or RELS 5013W - Biblical Law and Jewish Ethics [WI] (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 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 GER 3631 - Jewish Writers and Rebels in German, Austrian, and American Culture (3.0 cr)

• JWST 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (3.0 cr)
or GER 3633 - The Holocaust: Memory, Narrative, History [HIS, GP] (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 3775 - History of Jews in Europe and the Atlantic World, from 1700 to Present (3.0 cr)
or HIST 3775 - History of Jews in Europe and the Atlantic World, from 1700 to Present (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 SOC 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 SOC 5315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)

• JWST 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
or POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)

• 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 36
- Degree: Bachelor of Arts

The Hubbard School of Journalism and Mass Communication offers three tracks focused on distinct areas of study.

The professional journalism track prepares students for careers such as news reporting, writing, editing, producing, and photojournalism in traditional and emerging media. The professional strategic communication track prepares students for careers in advertising, public relations, and corporate, non-profit, health and advocacy communications. The two professional tracks are based on a liberal arts foundation, knowledge of the social context in which the professions are practiced, and the skills and experiences needed to succeed in the marketplace.

The mass communication track is for students who wish to study the social, political, economic, and legal aspects of mass communication. Students may develop a program emphasis in areas such as history, law, media effects, media industry studies, international communication, or other aspects of mass communication studies represented in the Hubbard School of Journalism and Mass Communication.

About two-thirds of the coursework for the BA degree is outside of journalism. The 120-credit requirement must include at least 72 non-journalism credits. Total program credits may not exceed 48.

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 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.

Students who are admitted usually have a 3.00 or higher overall GPA, and must have a grade of C or better in JOUR 1001.

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-journalism 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.

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)

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 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
  or ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• JOUR 5601W - History of Journalism [WI] (3.0 cr)

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

Mass Communication Track
The mass communication track is for students who wish to study the social, political, economic, and legal aspects of mass communication. Students may develop a program emphasis in areas such as history, law, media effects, media industry studies, international communication, or other aspects of mass communication studies represented in the School of Journalism and Mass Communication.

Context Courses
All courses must be chosen in consultation with a major advisor. Directed studies, special topics and honors major project courses may be used to meet this requirement. With advisor approval, one to three professional (skills) courses may count.

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)
  or ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)

• International/Multicultural
Take 1 or more course(s) from the following:

• JOUR 3552 - Internet and Global Society [GP] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 5601W - 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 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)
- JOUR 4274W - Advertising in Society [WI] (3.0 cr)
- JOUR 3751 - Digital Media and Culture [AH, TS] (3.0 cr)
- JOUR 5552 - Law of Internet Communications (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 3776 - Mass Communication Law (3.0 cr)
  or JOUR 3776H - Mass Communication Law (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)

Capstone
The capstone requirement is fulfilled by taking two 4xxx or 5xxx courses as part of the 30-credit context courses sub-requirement. Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the journalism BA - mass communication capstone.

Professional Strategic Communication Track
The professional strategic communication track prepares students for careers in advertising, public relations, corporate, non-profit, and advocacy communications.

Professional and Context Courses must be chosen in consultation with a major advisor.

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 of the following courses: JOUR 4242, JOUR 4243, JOUR 4259, or JOUR 4262. Professional courses from the professional journalism track may also be used (prerequisites must be met).
Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:

Execution Skills
Take 6 or more credit(s) from the following:
- JOUR 3102 - Multimedia Production and Storytelling (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 3321 - Media Design (3.0 cr)
- JOUR 3451 - TV, Radio and Digital News Reporting (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 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 4259 - Strategic Communication Case Analysis (3.0 cr)
- JOUR 4262 - Management for Strategic Communication (3.0 cr)

Context Courses
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 - Internet and Global Society [GP] (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 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)
- JOUR 3993 - Directed Study (1.0 - 3.0 cr)
- JOUR 3776 - Mass Communication Law (3.0 cr)
  or JOUR 3776H - Mass Communication Law (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 4733H - Honors Thesis Seminar [WI] (3.0 cr)
- JOUR 4801 - Global Communication (3.0 cr)
- JOUR 4993H - Honors: Projects (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 Communications (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)
- JOUR 5993 - Directed Study (1.0 - 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 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
  or ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)

Capstone
The capstone requirement is fulfilled by taking JOUR 4263, and 4242, 4243, 4259, or 4262. Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the journalism BA - professional strategic communication capstone.

Professional Journalism Track
The professional journalism track prepares students for careers such as news reporting, writing, editing, producing, and photojournalism in traditional and emerging media.

Professional and Context Courses must be chosen in consultation with major advisor.

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
Professional courses from the strategic communication track may also be used (prerequisites must be met).

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)

- 4xxx-5xxx
  Take 2 or more course(s) from the following:
  • JOUR 4171 - Covering the Arts (3.0 cr)
  • JOUR 4193 - Brovald-Sim Community Journalism Practicum (3.0 cr)
  • JOUR 4302 - Photojournalism (3.0 cr)
  • JOUR 4303 - Documentary Photojournalism (3.0 cr)
  • JOUR 4451 - Advanced Multimedia Storytelling (3.0 cr)
  • JOUR 4452 - Electronic Newscast Producing (3.0 cr)
  • JOUR 4990 - Special Topics in Mass Communication: Professional (3.0 cr)
  • JOUR 4992 - Field Based Practicum (3.0 cr)
  • JOUR 5131 - In-Depth Reporting (3.0 cr)
  • JOUR 5155 - Database Reporting (3.0 cr)
  • JOUR 5174 - Magazine Editing and Production (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 - Internet and Global Society [GP] (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 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)
  • JOUR 3993 - Directed Study (1.0 - 3.0 cr)

- 4xxx-5xxx
  Take 1 or more course(s) totaling 3 or more credit(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 4733H - Honors Thesis Seminar [WI] (3.0 cr)
  • JOUR 4801 - Global Communication (3.0 cr)
  • JOUR 4993H - Honors: Projects (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 Communications (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)
  • JOUR 5993 - Directed Study (1.0 - 3.0 cr)
  • JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
  • JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
  • JOUR 5606W - Literary Aspects of Journalism [WI] (3.0 cr)

Capstone
The capstone requirement is fulfilled by taking two 4xxx or 5xxx courses as part of the 15-credit professional courses sub-requirement. Students who double major within CLA and choose to complete the capstone requirement in their other major are still required to take the journalism BA - professional journalism capstone.

BA/MA Health Communication
This sub-plan is optional and does not fulfill the sub-plan requirement for this program.

The BA/MA in health communication prepares students for health care careers that rely on the strategic use of health information to communicate with patient and non-patient publics, care providers, administrators and other public health stakeholders. Please note that admitted BA/MA health communication students are required to complete the professional strategic communication sub-plan in addition to this sub-plan.
The BA/MA in health communication is an accelerated bachelor's-master's degree that is completed over the course of five years. Enrollment in the BA/MA is contingent on acceptance through a formal admissions process in spring of the junior year. Please contact the School of Journalism & Mass Communication advisor for more information. The BA/MA is open to journalism majors only. Accepted students in the BA/MA must maintain timely degree progress such that all undergraduate graduation requirements are completed by the end of the fourth year. Accepted students complete nine credits of graduate coursework in the fourth year before moving to full-time graduate study in the summer after the fourth year.

Admissions criteria include:
- GRE score of 155 or higher in verbal, 155 or higher in quantitative reasoning, and 4.5 or higher in analytical writing
- GPA of 3.5 or higher
- Statement of objectives and a resume that demonstrate motivation and readiness for the program
- Writing sample

Students who are admitted to the BA/MA in health communication must fulfill the BA/MA health communication sub-plan requirements in addition to all degree program requirements for the journalism BA. Courses used to fulfill the degree program requirements may not be used to fulfill the BA/MA requirements.

**Mass Communication and Public Health**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **JOUR 5541** - Mass Communication and Public Health (3.0 cr)

**Theory-based Health Message Design**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **JOUR 5542** - Theory-based Health Message Design (3.0 cr)

**BA/MA Elective**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- **JOUR 5501** - Communication, Public Opinion, and Social Media (3.0 cr)
  or **PSY 5205** - Applied Social Psychology (3.0 cr)
  or **WRIT 4501** - Usability and Human Factors in Technical Communication (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 2018
• 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:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 5442</td>
<td>Archaeology of the British Isles (3.0 cr)</td>
<td></td>
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<tr>
<td>CNES 3081W</td>
<td>Classical Epic in Translation [LITR, WI] (3.0 cr)</td>
<td></td>
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<tr>
<td>CNES 3104</td>
<td>Ancient Rome: Kings and Consuls (3.0 cr)</td>
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<tr>
<td>CNES 3105</td>
<td>Ancient Rome: The Age of Augustus (3.0 cr)</td>
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<tr>
<td>CNES 3106</td>
<td>Ancient Rome: The Age of Nero (3.0 cr)</td>
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<tr>
<td>CNES 3601</td>
<td>Sexuality and Gender in Ancient Greece and Rome [AH] (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 5053</td>
<td>Doing Roman History: Sources, Methods, and Trends (3.0 cr)</td>
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<tr>
<td>LAT 5100</td>
<td>Advanced Reading (3.0 cr)</td>
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<tr>
<td>LAT 5200</td>
<td>Advanced Reading in Later Latin (3.0 cr)</td>
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<tr>
<td>LAT 5701</td>
<td>Latin Prose Composition (3.0 cr)</td>
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<tr>
<td>LAT 5703</td>
<td>Epigraphy (3.0 cr)</td>
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<tr>
<td>ANTH 3009</td>
<td>Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)</td>
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<td>HIST 3066</td>
<td>Prehistoric Pathways to World Civilization [HIS] (3.0 cr)</td>
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<tr>
<td>CNES 3061</td>
<td>&quot;Bread and Circuses:&quot; Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)</td>
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<tr>
<td>HIST 3061</td>
<td>&quot;Bread and Circuses:&quot; Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)</td>
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<tr>
<td>CNES 3072</td>
<td>The Birth of Christianity [AH] (3.0 cr)</td>
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<td>Age of St. Augustine of Hippo (3.0 cr)</td>
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<td>ARTH 3162</td>
<td>Roman Art and Archaeology [HIS] (3.0 cr)</td>
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<td>Ancient Israel: From Conquest to Exile (3.0 cr)</td>
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<td>HIST 3502</td>
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<td>JWST 3502</td>
<td>Ancient Israel: From Conquest to Exile (3.0 cr)</td>
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<td>CNES 3535</td>
<td>Death and the Afterlife in the Ancient World [AH] (3.0 cr)</td>
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<tr>
<td>RELS 3535</td>
<td>Death and the Afterlife in the Ancient World [AH] (3.0 cr)</td>
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<tr>
<td>GRK 5705</td>
<td>Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)</td>
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<td>LAT 5705</td>
<td>Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)</td>
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<td>CNES 5013</td>
<td>Introduction to Roman Law (3.0 cr)</td>
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<tr>
<td>LAW 6029</td>
<td>Introduction to Roman Law (3.0 cr)</td>
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Twin Cities Campus
Linguistics B.A.
Linguistics, Institute of
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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)
  or LING 5202 - Syntactic Theory II (3.0 cr)
  or LING 4303 - Phonology II (3.0 cr)
  or 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 [SOCS, DSJ, WI] (4.0 cr)
  • ANTH 4035 - Ethnographic Research Methods (3.0 cr)
  • CHN 5120 - Topics in Chinese Linguistics (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 [SOCS, WI] (3.0 cr)
  or **ANTH 5015W** - Biology, Evolution, and Cultural Development of Language [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:

- **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 [SOCS, WI] (3.0 cr)
  or **ANTH 5015W** - Biology, Evolution, and Cultural Development of Language [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 2018
- 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)
**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 2018
- Required credits in this minor: 18

The minor serves students who wish to study the social, political, economic, and legal aspects of mass communication.

**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 consult the Hubbard School of Journalism & Mass Communication website at [https://cla.umn.edu/hsjmc/undergraduate/major-minors](https://cla.umn.edu/hsjmc/undergraduate/major-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, an advisor in Room 110 Murphy Hall will approve a minor program plan.

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

**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**  
At least 1 Context Course must be taken at the 4xxx or 5xxx level.  
Take 4 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 - Internet and Global Society [GP] (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)
• JOUR 3796 - Media and Politics (3.0 cr)

**4xxx and 5xxx-level Context Courses**
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 4721 - Mass Media and U.S. Society [SOCS, DSJ] (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 Communications (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)
Twin Cities Campus
Mathematics B.A.
School of Mathematics
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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 4997W**

A student in MATH 4997W will complete a paper of at least 10 pages that goes through at least one cycle of revisions.

**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 exactly 2 course(s) totaling exactly 8 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 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 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 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 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 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 5335 - Geometry I (4.0 cr)
• MATH 5336 - Geometry II (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 5751 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)
• STAT 5102 - Theory of Statistics II (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 - Theory of Statistics II (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

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

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 2013 - 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 - 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 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5707 - Graph Theory and NonEnumerative 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 - Algorithms and Data Structures (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 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)

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 - Geometry II (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)

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• 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 5102 - Theory of Statistics II (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; BIOL 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 (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 - Algorithms and Data Structures (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 - Algorithms and Data Structures (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 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 5165 - Mathematical Logic II (4.0 cr)
• MATH 5166 - 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 5336 - Geometry II (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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<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MATH 5486</td>
<td>Introduction To Numerical Methods II</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5525</td>
<td>Introduction to Ordinary Differential Equations</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5583</td>
<td>Complex Analysis</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5587</td>
<td>Elementary Partial Differential Equations I</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5588</td>
<td>Elementary Partial Differential Equations II</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5615H</td>
<td>Honors: Introduction to Analysis I</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5616H</td>
<td>Honors: Introduction to Analysis II</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5652</td>
<td>Introduction to Stochastic Processes</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5654</td>
<td>Prediction and Filtering</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5705</td>
<td>Enumerative Combinatorics</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5707</td>
<td>Graph Theory and Non-Enumerative Combinatorics</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5711</td>
<td>Linear Programming and Combinatorial Optimization</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>STAT 5102</td>
<td>Theory of Statistics II</td>
<td>4.0 cr</td>
</tr>
</tbody>
</table>

**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 4700 - 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 2018
• Required credits in this minor: 25 to 30

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)
  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)

Minor Requirements
Students may earn no more than one undergraduate degree in mathematics: a BA, a BS, or a minor.

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)
  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)
  or 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 3283 - Sequences, Series, and Foundations (3.0 cr)
  or MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)

**Electives**
Selection of MATH course electives for the minor requires department advisor approval. As many as 1 STAT course (Theory of Statistics I or II) listed below may count towards the Electives requirement.
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 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 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 5336 - Geometry II (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 - Theory of Statistics II (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 2018
• 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:

• ALL 3832 - The Politics of Arabic Poetry [LITR, GP] (3.0 cr)
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• ARTH 5324 - 15th-Century Painting (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)
• FREN 3115 - Saints and Soldiers of Medieval France [CIV] (3.0 cr)
• FREN 3140 - Topics in Medieval and Renaissance Literature (3.0 cr)
• FREN 3611 - Speaking of Love in Medieval France: Stories, Songs, and Letters [LITR, GP] (3.0 cr)
• FREN 3711 - Speaking of Love in Medieval France: Stories, Songs, and Letters [LITR, GP] (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 (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)
- HMED 3001W - Health, Disease, and Healing [HIS, WI] (4.0 cr)
- HMED 3065 - Body, Soul, and Spirit in Medieval and Renaissance European Medicine (3.0 cr)
- HSCI 3814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
- ITAL 5401 - Mondo di Dante (4.0 cr)
- ITAL 5609 - World of Dante (4.0 cr)
- LAT 5200 - Advanced Reading in Later Latin (3.0 cr)
- MEST 3002 - Medieval Tales and their Modern Echoes [LITR, GP] (3.0 cr)
- MEST 3610 - Topics in Medieval Studies (3.0 - 4.0 cr)
- MEST 3993 - Directed Studies in Medieval Studies (1.0 - 3.0 cr)
- MUS 3601W - History of Western Music I [WI] (3.0 cr)
- SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)
- SCAN 3503 - Scandinavian Folklore [LITR, GP] (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)
- SPAN 3503 - Pre-modern Spanish Culture and Thought [HIS] (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 - West African History: Early Times to 1800 [GP] (3.0 cr)
- AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 cr)
- ALL 3373 - Religion and Society in Imperial China (3.0 cr)
- ALL 3872 - The Cultures of the Silk Road (3.0 cr)
- ANTH 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
- ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
- ARTH 3009 - Medieval Art [AH] (3.0 cr)
- ARTH 3009 - Medieval Art [AH] (3.0 cr)
- ARTH 3009 - Medieval Art [AH] (3.0 cr)
- ARTH 3009 - Medieval Art [AH] (3.0 cr)
- ARTH 3777 - 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)
- CSCL 3281 - European Intellectual History: The Early Modern Period, Antiquity to 1700 (3.0 cr)
- CSCL 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1700 (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)
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) |
| RELS 3543 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr) |
| or RELS 3544 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr) |
| or MEST 3544 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr) |
| HIST 3767 - Eastern Orthodoxy: History and Culture (3.0 cr) |
| or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr) |
| or MEST 4718W - Christ in Islamic Thought [WI] (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 - Medieval Literatures and Cultures: Intro to Medieval Studies (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 3081 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr) |
| or MEST 3081 - History of Christianity I: Martyrs, Monks, Crusaders (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 HIST 5271 - 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 EAS 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 RELS 3718W - Christ in Islamic Thought [WI] (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 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 2018
• 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 - 16th-Century Counterpoint (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 - Wagner's Ring: Conception, Coherence, Consequence (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 - Organ Literature I (3.0 cr)
• MUS 5152 - Organ Literature II (3.0 cr)
• MUS 5153 - Organ Pedagogy (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)
Take 16 or more credit(s) from the following:
• 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 - Contemporary Music Workshop (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)
• Take 8 or more credit(s) from the following:
  • 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)

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 3309 - Flute: 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 - University Brass Choir (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 2018
• 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 (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 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 - 16th-Century Counterpoint (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 - Wagner's Ring: Conception, Coherence, Consequence (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 (2.0 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:
• MUSA 12xx (2.0 cr)
Take exactly 2 course(s) totaling exactly 4 credit(s) from the following:
• MUSA 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 - Contemporary Music Workshop (1.0 cr)
• MUS 5440 - Chamber Ensemble (1.0 cr)
• MUS 5460 - World Music Ensemble (1.0 - 2.0 cr)
• MUS 5480 - University Brass Choir (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 2018
- 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 no 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)

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)

Conducting
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• MUS 3401 - Basic Conducting (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 - Fundamentals of Alcohol and Drug Abuse for Teacher Education (1.0 cr)
• Take 2 or more course(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:
• MUSA 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 - University Brass Choir (1.0 cr)
• MUS 5490 - Percussion Ensemble (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 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 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 2018
- Required credits in this minor: 20 to 24

A minor in music is available for students majoring in other fields.

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

Admission Requirements
An entrance audition identical to that for a music major is required.

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:
Take exactly 1 course(s) totaling exactly 2 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)

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Information current as of August 24, 2018
• 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 2018
• 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—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 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)
• 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 Ed 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 (3.0 cr)
  or NSCI 2100 - 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.
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, Scandinavian, & Dutch
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 16 to 36

The minor allows students to study the language, literature, and culture of Norway and the other Nordic countries.

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 complete 4 semester(s) of Norwegian. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

At least one upper-division course 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 3xxx
- SCAN 4xxx
- SCAN 5xxx

Directed Study
Take no more than 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 2018
- 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 (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 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:
• OJIB 3103 - Intermediate Ojibwe I (5.0 cr)
• OJIB 3104 - Intermediate Ojibwe II (5.0 cr)
• OJIB 3127 - Ojibwe Language for Teachers (3.0 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)
• AMIN 3141 - American Indian Language Planning (3.0 cr)
• AMIN 3804 - Indigenous Immersion Methods for the Home, Classroom, and Community (3.0 cr)

Electives
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
• AMIN 1001 - American Indian Peoples in the United States [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 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 3876 - American Indian Education (3.0 cr)
• AMIN 4511 - American Indian Political Economy (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 5202 - American Indians and the Supreme Court (3.0 cr)
• AMIN 5920 - Topics in American Indian Studies (3.0 cr)
• POL 1019 - Indigenous Peoples in Global Perspective [GP] (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)
• AMIN 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
• AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AMEN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• AMIN 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
• ANTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
• ARTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
• RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)
• AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
• AMIN 3402 - 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 3501 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)
• AMIN 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)
• 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)
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or POL 4507 - Law, Sovereignty, and Treaty Rights (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 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or 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 2018
- 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 analytical 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 - Introduction to Aesthetics [WI] (3.0 cr)
• PHIL 4310W - History of Moral Theories [WI] (3.0 cr)
• PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
• PHIL 4321W - Theories of Justice [WI] (3.0 cr)
• PHIL 4330 - 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 - Introduction to Aesthetics [WI] (3.0 cr)
• PHIL 4501 - Principles of Aesthetics (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 4310W - History of Moral Theories [WI] (3.0 cr)
- PHIL 4320 - Intensive Study of a Historical Moral Theory (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 Language: 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 - Philosophy of Logic (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.

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Information current as of August 24, 2018
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 - Theories of Justice [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)
- PHIL 1005 - Scientific Reasoning (4.0 cr)
  or PHIL 1005H - Scientific Reasoning (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 the opportunity to engage and combine skills in analysis, critical thought and clear 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**
  
  Complete an 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 roughly 15 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 - Introduction to Aesthetics [WI] (3.0 cr)
• PHIL 3601W - Scientific Thought [WI] (4.0 cr)
• PHIL 4105W - Epistemology [WI] (3.0 cr)
• PHIL 4310W - History of Moral Theories [WI] (3.0 cr)
• PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
• PHIL 4321W - Theories of Justice [WI] (3.0 cr)
• PHIL 4322W - Moral Problems of Contemporary Society [CIV, WI] (4.0 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 - Social Justice and Community Service [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 2018
- 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** - Introduction to Aesthetics [WI] (3.0 cr)
- **PHIL 4501** - Principles of Aesthetics (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)

**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 4310W - History of Moral Theories [WI] (3.0 cr)
- PHIL 4320 - Intensive Study of a Historical Moral Theory (3.0 cr)
- PHIL 4330 - 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 - Philosophy of Logic (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** - Theories of Justice [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 2018
- 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)
  - PHYS 1501V - Honors Introduction to Mechanics [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)
  - PHYS 1502V - Honors Introduction to Electricity and Magnetism [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

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Information current as of August 24, 2018
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 2018
• 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:
• 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)

Introductory Thermodynamics and Statistical Physics
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• PHYS 2201 - Introductory Thermodynamics and Statistical Physics (4.0 cr)

Physics I
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)
  or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
  or PHYS 1501V - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)

Physics II
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• 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 - Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)

Physics III
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
  or 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 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 4621** - Introduction to Plasma Physics (3.0 cr)
- **PHYS 4911** - Introduction to Biopolymer 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 5051** - Introduction to Biopolymer Physics (3.0 cr)
- **PHYS 5201** - Thermal and Statistical Physics (3.0 cr)
- **PHYS 5401** - Physiological Physics (4.0 cr)
- **PHYS 5402** - Radiological Physics (4.0 cr)
- **PHYS 5621** - Introduction to Plasma Physics (3.0 cr)
- **PHYS 5701** - Solid-State Physics for Engineers and Scientists (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)
- **HSCI 4121W** - History of 20th-Century Physics [WI] (3.0 cr)
  or **PHYS 4121W** - History of 20th-Century Physics [WI] (3.0 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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 35
• Degree: Bachelor of Arts

Political scientists study topics, such as the exercise of power and influence; sources and resolution of conflicts; the relation of politics to the economy, culture, and other aspects of society; the adoption and implementation of public policies; and the development of political systems. These topics are studied at all levels, from local communities to the global community.

The scope of the discipline is reflected in the main areas of specialization that make up the undergraduate curriculum: political theory, comparative government and politics, international relations, and American governmental systems and processes. In addition, undergraduates may choose from several optional concentrations: business and politics, campaigns and elections, citizenship and civic action, global politics, law and politics, democratization and development, political psychology, beliefs, and behavior, and public affairs.

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.

Choosing a sub-plan is optional.

Students may earn a BA or a minor in political science, but not both.

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.

Preparatory 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 1201 - Political Ideas and Ideologies [HIS, CIV] (4.0 cr)
• POL 1234 - Citizen U: Building Tomorrow's Citizens Today (3.0 cr)
• POL 19xx - Freshman Seminar
• POL 1001 - American Democracy in a Changing World [SOCS] (4.0 cr)
  or POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (4.0 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] (4.0 cr)
  or POL 1025H - Honors: Global Politics [SOCS, GP] (4.0 cr)
• POL 1054 - Puzzles in World Politics [SOCS, GP] (4.0 cr)
  or POL 1054H - Honors: Puzzles in World Politics [SOCS, GP] (4.0 cr)

Upper Division Courses
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 3 or more course(s) from the following:
Political Theory
Take 0 or more credit(s) from the following:
• POL 3210 - Topics in Political Theory (3.0 cr)
• 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 4210 - Topics in Political Theory (3.0 cr)
• POL 4253 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
• POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
• POL 4280 - Topics in Political Theory (3.0 - 4.0 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 3431 - Politics of India [GP] (4.0 cr)
• POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
• POL 3464 - Politics of Inequality (3.0 cr)
• POL 3474 - Russian Politics: From Soviet Empire to Post-Soviet State (3.0 cr)
• POL 3475 - Islamist Politics (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 3489W - 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 4473W - Chinese Politics [GP, WI] (3.0 cr)
• POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
• POL 4487 - The Struggle for Democratization and Citizenship (4.0 cr)
• POL 4495 - Politics of Family, Sex, and Children [DSJ] (3.0 cr)
• POL 5410 - Topics in Comparative Politics (1.0 - 3.0 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] (4.0 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 4477 - Struggles and Issues in the Middle East (4.0 cr)
• POL 4477W - 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:
• POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
• POL 3309 - Justice in America (3.0 cr)
• POL 3310 - Topics in American Politics (3.0 cr)
• POL 3310H - 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 3365 - Government and Medicine (3.0 cr)
• POL 3373 - From Suffragettes to Senators: Gender, Politics & Policy in the U.S. [DSJ] (3.0 cr)
• POL 3379 - Politics of Race, Class, and Ethnicity (3.0 cr)
• POL 3376 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
• POL 3377 - 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 4776 - America, the Unusual? American Political Culture in Comparative Context [CIV] (3.0 cr)
• POL 4777 - Race and Politics in America: Making Sense of Racial Attitudes in the United States [DSJ] (3.0 cr)
• POL 4778W - 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 5331 - Thinking Strategically in Domestic Politics (3.0 - 4.0 cr)
• POL 5327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
  or POL 5327 - Politics of American Cities and Suburbs (3.0 cr)
• POL 5372 - Chican/o Politics [SOCS, DSJ] (3.0 cr)
  or CHIC 3852 - Chican/o Politics [SOCS, DSJ] (3.0 cr)
• POL 5379 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
  or POL 5767 - Public Opinion and Voting Behavior (3.0 cr)
• POL 5385 - Persuasion and Political Propaganda (3.0 cr)
  or POL 5785H - Persuasion and Political Propaganda (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
  or POL 5315 - State Governments: Laboratories of Democracy (4.0 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 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
  or AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
• POL 4525W - Federal Indian Policy [WI] (3.0 cr)
  or AMIN 4525W - Federal Indian Policy [WI] (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 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
• POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
• POL 4883W - Global Governance [WI] (3.0 cr)
• POL 4887 - Thinking Strategically in International Politics [MATH] (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 5885W - International Conflict and Security [GP, WI] (4.0 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 4010 - Topics in Methods (4.0 cr)
• POL 4900H - Honors Thesis (1.0 - 6.0 cr)
• POL 4970 - Individual Reading and Research (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 - Faculty-Supervised Individual Internships (3.0 - 13.0 cr)
  • POL 3070 - Distinguished Undergraduate Research Internship (2.0 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 3419W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
  • POL 3499W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
  • POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
  • POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
  • POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
  • POL 4473W - Chinese Politics [GP, 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 4878W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
  • POL 4879W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
  • POL 4898W - Global Governance [WI] (3.0 cr)
  • POL 4895W - International Conflict and Security [GP, WI] (4.0 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.

Business and Politics

Business and Politics
Take 4 or more course(s) from the following:
  • POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
  • POL 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
  • POL 4481 - Comparative Political Economy: Governments and Markets (3.0 cr)
  • POL 3833 - The United States and the Global Economy (3.0 cr)
  • POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
    or POL 5315 - State Governments: Laboratories of Democracy (4.0 cr)

Campaigns and Elections

Campaigns and Elections
Take 4 or more course(s) from the following:
  • POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
  • POL 3210 - Topics in Political Theory (3.0 cr)
  • POL 3225 - American Political Thought [CIV] (3.0 cr)
  • POL 3766 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
Citizenship and Civic Action

Take 4 or more course(s) from the following:

- POL 3210 - Topics in Political Theory (3.0 cr)
- POL 3225 - American Political Thought [CIV] (3.0 cr)
- POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
- POL 3253 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
- POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 4210 - Topics in Political Theory (3.0 cr)
- POL 4255 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
- POL 4487 - The Struggle for Democratization and Citizenship (4.0 cr)
- POL 4502W - The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)
- POL 4766 - America, the Unusual?: American Political Culture in Comparative Context [CIV] (3.0 cr)

Democratization and Development

Take 4 or more course(s) from the following:

- POL 3210 - Topics in Political Theory (3.0 cr)
- POL 3253W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 4210 - Topics in Political Theory (3.0 cr)
- POL 4253 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
- POL 4477 - Struggles and Issues in the Middle East (4.0 cr)
- POL 4479 - Latin American Politics [GP] (3.0 cr)
- POL 4487 - The Struggle for Democratization and Citizenship (4.0 cr)
- POL 44766 - America, the Unusual?: American Political Culture in Comparative Context [CIV] (3.0 cr)
- POL 4885W - International Conflict and Security [GP, WI] (4.0 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)

Global Politics

Take 4 or more course(s) from the following:

- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3835 - International Relations [SOCS, GP] (3.0 cr)
- POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
- POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
- POL 4477 - Struggles and Issues in the Middle East (4.0 cr)
- POL 3479 - Latin American Politics [GP] (3.0 cr)
- POL 3833 - The United States and the Global Economy (3.0 cr)
- POL 4883W - Global Governance [WI] (3.0 cr)
- POL 4885W - International Conflict and Security [GP, WI] (4.0 cr)
- POL 4887 - Thinking Strategically in International Politics [MATH] (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)

Law and Politics

Take 4 or more course(s) from the following:

- POL 3225 - American Political Thought [CIV] (3.0 cr)
- POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
- POL 4253 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (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 4883W - Global Governance [WI] (3.0 cr)

**Political Psychology, Beliefs, and Behavior**

**Political Psychology, Beliefs, and Behavior**

Take 4 or more course(s) from the following:

- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 3766 - Political Psychology of Mass Behavior [SOCS] (3.0 cr)
- POL 4253 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
- POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
- POL 4766 - America, the Unusual?: American Political Culture in Comparative Context [CIV] (3.0 cr)
- POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)

**Public Affairs**

**Public Affairs**

Take 4 or more course(s) from the following:

- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3321 - Issues in American Public Policy (3.0 cr)
- POL 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (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)
- POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
- POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
  or POL 5315 - State Governments: Laboratories of Democracy (4.0 cr)
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 2018
• Required credits in this minor: 16

Political scientists study topics, such as the exercise of power and influence; sources and resolution of conflicts; the relation of politics to the economy, culture, and other aspects of society; the adoption and implementation of public policies; and the development of political systems. These topics are studied at all levels, from local communities to the global community.

The scope of the discipline is reflected in the main areas of specialization that make up the undergraduate curriculum: political theory, comparative government and politics, international relations, and American governmental systems and processes.

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.

Students may earn a BA or a minor in political science, but not both.

Minor Courses
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 (3.0 cr)
• POL 1201 - Political Ideas and Ideologies [HIS, CIV] (4.0 cr)
• POL 1234 - Citizen U: Building Tomorrow's Citizens Today (3.0 cr)
• POL 19xx - Freshman Seminar
• POL 1001 - American Democracy in a Changing World [SOCS] (4.0 cr)
  POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (4.0 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] (4.0 cr)
  or POL 1025H - Honors: Global Politics [SOCS, GP] (4.0 cr)
• POL 1054 - Puzzles in World Politics [SOCS, GP] (4.0 cr)
  or POL 1054H - Honors: Puzzles in World Politics [SOCS, GP] (4.0 cr)
• Political Theory
  Take 0 or more credit(s) from the following:
  • POL 3210 - Topics in Political Theory (3.0 cr)
  • 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 4210 - Topics in Political Theory (3.0 cr)
  • POL 4253 - Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)
  • POL 4275 - Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)
  • POL 4280 - Topics in Political Theory (3.0 - 4.0 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 3431 - Politics of India [GP] (4.0 cr)
  - POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
  - POL 3464 - Politics of Inequality (3.0 cr)
  - POL 3474 - Russian Politics: From Soviet Empire to Post-Soviet State (3.0 cr)
  - POL 3475 - Islamist Politics (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 3489W - 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 4473W - Chinese Politics [GP, WI] (3.0 cr)
  - POL 4491 - Comparative Political Economy: Governments and Markets (3.0 cr)
  - POL 4487 - The Struggle for Democratization and Citizenship (4.0 cr)
  - POL 4495 - Politics of Family, Sex, and Children [DSJ] (3.0 cr)
  - POL 5410 - Topics in Comparative Politics (1.0 - 3.0 cr)
  - POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
  - POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
  - POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
  - POL 4503 - Constitutions, Democracy, and Rights: Comparative Perspectives (3.0 cr)
  - POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
  - POL 4477 - Struggles and Issues in the Middle East (4.0 cr)
  - POL 4766 - America, the Unusual?: American Political Culture in Comparative Context [CIV] (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 492 - Law and (In)Justice in Latin America (3.0 cr)
  - POL 492 - Law and (In)Justice in Latin America (3.0 cr)

• **American Government**
  Take 0 or more credit(s) from the following:
  - POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
  - POL 3309 - Justice in America (3.0 cr)
  - POL 3310 - Topics in American Politics (3.0 cr)
  - POL 3310H - 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 3365 - Government and Medicine (3.0 cr)
  - POL 3733 - From Suffragettes to Senators: Gender, Politics & Policy in the U.S. [DSJ] (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 3777 - 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 4766 - America, the Unusual?: American Political Culture in Comparative Context [CIV] (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 5331 - Thinking Strategically in Domestic Politics (3.0 - 4.0 cr)
  - POL 5327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
  - POL 5327 - Politics of American Cities and Suburbs (3.0 cr)
  - POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
  - POL 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
  - CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
  - POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
  - POL 5767 - Public Opinion and Voting Behavior (3.0 cr)
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)
  or POL 3785H - Persuasion and Political Propaganda (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
  or POL 5315 - State Governments: Laboratories of Democracy (4.0 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 4507 - Law, Sovereignty, and Treaty Rights (3.0 cr)
  or AMIN 4501 - Law, Sovereignty, and Treaty 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 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
• POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
• POL 4883W - Global Governance [WI] (3.0 cr)
• POL 4887 - Thinking Strategically in International Politics [MATH] (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 EconomyUS For Econ Policy (3.0 - 4.0 cr)
• POL 4885W - International Conflict and Security [GP, WI] (4.0 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 4010 - Topics in Methods (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 3070 & POL 4970 do not count toward the minor.
Take at most 3 credit(s) from the following:
• POL 3080 - Faculty-Supervised Individual Internships (3.0 - 13.0 cr)
Twin Cities Campus

Portuguese Studies Minor

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- 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 - Topics in Lusophone Cultures (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 2018
- 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](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://cla.umn.edu/psychology/undergraduate/majors-minors/declare-your-major). 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 3001V - 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)**
- **PSY 5011 - Applied Behavior Analysis (3.0 cr)**
- **PSY 4016 - Behavior Analysis and Autism (4.0 cr)**
- **PSY 5016 - Behavior Analysis and Autism (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)**
- **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)**

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• PSY 5138 - Adult Development and Aging (3.0 cr)
• PSY 5501 - Vocational and Occupational Health Psychology (3.0 cr)
• PSY 5707 - Personnel Psychology (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 (3.0 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)

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Information current as of August 24, 2018
Psychology B.S.

Psychology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 - Scientific Reasoning (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 1086 - Honors Chemistry 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)
or CHEM 1082 - Chemistry for the Life Sciences II (3.0 cr)
with CHEM 1086 - Honors Chemistry for the Life Sciences II Laboratory (1.0 cr)
or CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
with CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
or CHEM 2301 - Organic Chemistry I (3.0 cr)
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)
or CHEM 2302 - Organic Chemistry II (3.0 cr)
or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)
or CHEM 2311 - Organic Lab (4.0 cr)
or CHEM 2312H - Honors Organic Lab (5.0 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 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)

**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 3100 - 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 3811 - Introduction to Animal Behavior (4.0 cr)
• NSCI 2001 - Human Neuroanatomy (without a lab) (3.0 cr)
or NSCI 2100 - 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 - 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 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 5011 - 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 [SOC] (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 5161 - Vocational and Occupational Health Psychology (3.0 cr)
• PSY 5707 - Personnel Psychology (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 (3.0 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)

**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 2018
- 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 Occupational Health Psychology (3.0 cr)
• PSY 5707 - Personnel Psychology (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)
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 2018
• 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
Note: PUBH 3004 is a 4-credit course that combines PUBH 3001 and PUBH 3003.
• PUBH 3001 - Personal and Community Health (2.0 cr)
  or PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
  or PUBH 3202 - What is Public Health? (2.0 cr)
• Part II
  • PUBH 3106 - Making Sense of Health Studies (2.0 cr)
    or PUBH 3350 - 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)
• CSSL 3351W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 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 3417 - Food in History [HIS, ENV] (3.0 cr)
• HIST 3418 - Drink in History [HIS] (3.0 cr)
• JOUR 3757 - Principles of Health Communication Strategy (3.0 cr)
• PHIL 3305 - Medical Ethics (4.0 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 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 4246 - Sociology of Health and Illness (3.0 cr)
• WRIT 3405W - Humanistic Healthcare and Communication [AH, 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)
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:
- 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 3040 - Dying and Death in Contemporary Society: Implications for Intervention (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 3415 - Introduction to Clinical Trials - Online (3.0 cr)
- PUBH 3639 - Prevention: Theory, Practice, and Application in Public Health Services (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 3940 - Concepts and Controversies in Public Health Nutrition and Health Promotion (1.0 cr)
- PUBH 3950 - From Kid to Community: Personal, Social and Environmental Influences on Youth Obesity (2.0 cr)
- PUBH 4410 - Summer Institute in Biostatistics (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 2018
- 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 - Introduction to the Study of Religions [AH] (3.0 cr)
- AMST 1011 - Religions and American Identity in the United States from World War II to the Present [CIV] (3.0 cr) or RELS 1011 - Religions and American Identity in the United States from World War II to the Present [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) or 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) or 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:


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) or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr) or 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) or CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr) or 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) or CNES 3072 - The Birth of Christianity [AH] (3.0 cr) or CNES 5072 - The Birth of Christianity [AH] (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 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)
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)
• RELS 3204 - The Dead Sea Scrolls (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)
• 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 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or AMIN 3301 - American Indian Philosophies [AH, DSJ] (3.0 cr)
or RELS 3322 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or ARTH 3205 - Art of Central and South America Before Columbus [AH] (3.0 cr)
or RELS 3371 - Buddhism [GP] (3.0 cr)
or ALL 3672 - Buddhism [GP] (3.0 cr)
or RELS 3372 - Reading Asian Cultures (3.0 cr)
or ALL 3001 - Reading Asian Cultures (3.0 cr)
or RELS 3373 - Religion and Society in Imperial China (3.0 cr)
or ALL 3373 - Religion and Society in Imperial China (3.0 cr)
or HIST 3466 - Religion and Society in Imperial China (3.0 cr)
or RELS 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or ALL 3377 - A Thousand Years of Buddhism in China: Beliefs, Practices, and Culture (3.0 cr)
or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
or ALL 3672 - 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)
• 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 3727 - History of the Holocaust (3.0 cr)
or JWST 3520 - History of the Holocaust (3.0 cr)
or CNES 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 - Age of St. Augustine of Hippo (3.0 cr)
or CNES 3108 - Age of St. Augustine of Hippo (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 3544 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr)
or HIST 3081 - History of Christianity I: Martyrs, Monks, Crusaders (3.0 cr)
or RELS 3545 - History of Christianity II: From the Middle Ages to the Enlightenment (3.0 cr)
in 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 (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 - The Christian Right and Left in America: Protestant Liberals, Evangelicals, and Fundamentalists [WI] (3.0 cr)
or RELS 5621W - The Christian Right and Left in America: Protestant Liberals, Evangelicals, and Fundamentalists [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 - Hinduism (3.0 cr)
or ALL 3671 - Hinduism (3.0 cr)
or ALL 5671 - Hinduism (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)
or RELS 5706W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or REL 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 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 ALL 3872 - The Cultures of the Silk Road (3.0 cr)
or HIST 3504 - The Cultures of the Silk Road (3.0 cr)
• RELS 3709 - Ancient Iran (3.0 cr)
or HIST 3503 - Ancient Iran (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 ALL 3871 - Islam: Religion and Culture (3.0 cr)
• RELS 3713 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
or HIST 3506 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (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)
or 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)
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 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 - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
or CNES 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
or JWST 5513W - Scripture and Interpretation in Israelite Religion and Judaism [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)
- RELS 3621W - The Christian Right and Left in America: Protestant Liberals, Evangelicals, and Fundamentalists [WI] (3.0 cr)
  - or RELS 5621W - The Christian Right and Left in America: Protestant Liberals, Evangelicals, and Fundamentalists [WI] (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 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 2018
• 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)
  or RELS 5013W - Biblical Law and Jewish Ethics [WI] (3.0 cr)
  or 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)
  or CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or 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)
  or CNES 3072 - The Birth of Christianity [AH] (3.0 cr)
  or 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)
• ARTH 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
• RELS 3621W - The Christian Right and Left in America: Protestant Liberals, Evangelicals, and Fundamentalists [WI] (3.0 cr)
• RELS 5621W - The Christian Right and Left in America: Protestant Liberals, Evangelicals, and Fundamentalists [WI] (3.0 cr)
• RELS 3622 - ‘Sinners, Saints, and Savages’: Religion in Early America (3.0 cr)
• 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)
• 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)
• SOC 3309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
• RELS 3625 - Magic and Medicine (3.0 cr)
• HIST 3285 - Magic and Medicine (3.0 cr)
• RELS 3627 - The End of the World in Literature and History [HIS] (3.0 cr)
• ENGL 3025 - The End of the World in Literature and History [HIS] (3.0 cr)
• RELS 3671 - Hinduism (3.0 cr)
• RELS 5671 - Hinduism (3.0 cr)
• ALL 3671 - Hinduism (3.0 cr)
• RELS 5671 - Hinduism (3.0 cr)
• RELS 3706W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• RELS 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• RELS 3708 - The Cultures of the Silk Road (3.0 cr)
• ALL 3872 - The Cultures of the Silk Road (3.0 cr)
• HIST 3504 - The Cultures of the Silk Road (3.0 cr)
• RELS 3709 - Ancient Iran (3.0 cr)
• HIST 3503 - Ancient Iran (3.0 cr)
• RELS 5709 - Ancient Iran (3.0 cr)
• RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
• GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
• GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
• RELS 3712 - Islam: Religion and Culture (3.0 cr)
• HIST 3493 - Islam: Religion and Culture (3.0 cr)
• ALL 3871 - Islam: Religion and Culture (3.0 cr)
• RELS 3713 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
• HIST 3506 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
• RELS 3714 - Islam and the West (3.0 cr)
• HIST 3546 - Islam and the West (3.0 cr)
• GLOS 3643 - Islam and the West (3.0 cr)
• RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
• HIST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
• MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
• RELS 3716 - Gender and the Family in the Islamic World (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)
• 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)
• HIST 3506 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
• RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
• HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
• RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• HIST 3572 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• RELS 5572 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• HIST 3513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• HIST 5513 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
• RELS 3722 - The Ottoman Empire [HIS, GP] (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
• RELS 4049 - Religion and Culture (3.0 cr)
• ANTH 4049 - Religion and Culture (3.0 cr)
• RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
• RELS 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
• CNES 5513W - Scripture and Interpretation in Israelite Religion and Judaism [WI] (3.0 cr)
• JWST 5513W - Scripture and Interpretation in Israelite Religion and Judaism [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)
• 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 2018
- 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 complete 4 semester(s) of Russian, 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 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**
Any RUSS 3xxx, 5xxx, or its cross-list that is not counting towards a different major requirement may count as an elective.
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)

**Directed Studies**
Take no more than 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.
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 2018
• Required credits in this minor: 16 to 26

Russian is the native language of some 150 million citizens of the Russian Federal Republic and remains the unofficial lingua franca of the former Soviet republics, an indispensable communications tool across all of the Caucasus and Central Asia. The minor in Russian includes the study of the spoken language as well as the literature and culture of Russia.

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 complete 4 semester(s) of Russian, with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

At least 1 upper-division course 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
Excluding directed studies (RUSS 3993, 5993), any RUSS 3xx, 5xx, or its cross-list that is not counting towards a different minor requirement may count as an elective.
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)
  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)
Twin Cities Campus

Sociology B.A.

Sociology
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 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 3301W - Politics and Society [WI] (3.0 cr)
or SOC 3411W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [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 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 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 4109 - Domestic Criminal Violence (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 - Adolescents and the Legal System (3.0 cr)
• SOC 4149 - 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 4191W - Sociology of Health and Illness (3.0 cr)
• SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SOC 4511 - Sociology of Youth: Transition to Adulthood (3.0 cr)
• SOC 4703 - Contemporary American Culture [CIV] (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 3101H - Honors: 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 - American Race Relations [DSJ, WI] (3.0 cr)
or AAS 3211W - American Race Relations [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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
or GLOS 3322W - Social Movements, Protests, and Change [CIV, WI] (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)
• AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
• SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 3511 - World Population Problems [GP] (3.0 cr)
• SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
• SOC 35511 - World Population Problems (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)
• SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 3671 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
• SOC 3613V - Honors: 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)
• SOC 3671 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
• SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 3681H - 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 3681 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
• SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4102W - Criminology (3.0 cr)
• SOC 4102H - Honors: Criminology (3.0 cr)
• SOC 4104W - Crime and Human Rights (3.0 cr)
• SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
• SOC 4104 - Crime and Human Rights (3.0 cr)
• SOC 4104 - Crime and Human Rights (3.0 cr)
• SOC 4135W - Sociology of White-Collar Crime (3.0 cr)
• SOC 4135H - Honors: Sociology of White-Collar Crime (3.0 cr)
• SOC 4141 - Juvenile Delinquency (3.0 cr)
• SOC 4141H - Honors: Juvenile Delinquency (3.0 cr)
• SOC 4170 - Sociology of International Law: Human Rights, Trafficking, and Business Regulation [GP] (3.0 cr)
• SOC 4406 - Sociology of International Law: Trafficking, Human Rights, & Business Regulation [GP] (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
• SOC 4309H - Honors: Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
• SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4315W - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4411H - Honors: 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 4521 - Love, Sex, & Marriage (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
• 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 4 - 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] (4.0 cr)

or Directed Research (4 cr.)
SOC 4994W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)

or Directed Research (1 cr.) with SOC elective
SOC 3xxx
or SOC 4xxx
or SOC 5xxx

or Honors
Students seeking honors in sociology should take both prosemesters in their senior year.
SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
SOC 4978V - Senior Honors 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 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 - American Race Relations [DSJ, WI] (3.0 cr)
  or AAS 3211W - American Race Relations [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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
  or GLOS 3322W - Social Movements, Protests, and Change [CIV, 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)
• 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] (4.0 cr)
• SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
• SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
• SOC 4978V - Senior Honors 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 54 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)
- MATH 1241 - Calculus and Dynamical Systems in Biology [MATH] (4.0 cr)
- 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)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)
- 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)
- 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)

**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 3311W - 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 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 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 4109 - Domestic Criminal Violence (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 - Adolescents and the Legal System (3.0 cr)
- SOC 4149 - 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 Youth: Transition to Adulthood (3.0 cr)
• SOC 4703 - Contemporary American Culture [CIV] (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 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 - American Race Relations [DSJ, WI] (3.0 cr)
or AAS 3211W - American Race Relations [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 3246H - 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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
or GLOS 3322W - Social Movements, Protests, and Change [CIV, WI] (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 3511 - World Population Problems [GP] (3.0 cr)
• SOC 3613V - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - 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 - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 3671 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
or GLOS 3911 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (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 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 4170 - Sociology of International Law: Human Rights, Trafficking, and Business Regulation [GP] (3.0 cr)
or GLOS 4406 - Sociology of International Law: Trafficking, Human Rights, & Business Regulation [GP] (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (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 4 - 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] (4.0 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
SOC 4xxx
SOC 5xxx

or Honors
Students seeking Honors in Sociology should take both proseminars in their senior year.
SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
SOC 4978V - Senior Honors 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 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 - American Race Relations [DSJ, WI] (3.0 cr)
SOC 3211W - American Race Relations [DSJ, 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)
GLOS 3322W - Social Movements, Protests, and Change [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)
SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)

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• 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)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
• SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4966W - Capstone Experience: Seminar [WI] (4.0 cr)
• SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
• SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
• SOC 4978V - Senior Honors Proseminar II [WI] (3.0 cr)
• SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 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)
• AFIN 4511 - American Indian Political Economy (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 - Applied Microeconomics: 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 3380 - Developing Intercultural Competence (3.0 cr)
• OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
• OLPD 3620 - Introduction to Training and Development (3.0 cr)
• OLPD 3640 - Introduction to Organization Development (3.0 cr)
• OLPD 3828 - Diversity in the Workplace (3.0 cr)
• OLPD 4401 - E-Marketing (3.0 cr)
• OLPD 4420 - 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 - Web Designer Introduction (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 - Honors: Human Resource Management and Industrial Relations (3.0 cr)
  or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (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:
• ABLIS 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 [SOC, GP] (3.0 cr)
• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• CPH 5115 - Cultural Awareness, Knowledge and Health (3.0 cr)
• CPH 5121 - Whole Systems Healing: Health and the Environment (2.0 cr)
• CPH 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 3011W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
• HMED 3021W - 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 [SOC] (3.0 cr)
• OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
• OLPD 3620 - Introduction to Training and Development (3.0 cr)
• OLPD 3640 - 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 4200W - 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 3350 - 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 Service (3.0 cr)
• SW 3703 - Gender Violence in Global Perspective (3.0 cr)
• WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
• HIL 3320W - 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 3350W - 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)
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 [GP] (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] (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- GWSS 3590 - Topics: Social Change, Activism, Law, and Policy Studies (3.0 cr)
- HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity [DSJ] (4.0 cr)
- ID 3208 - 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 - Religion, Ethics, and Educational Policy [CIV] (3.0 cr)
- OLPD 3380 - 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 - Politics of Inequality (3.0 cr)
- POL 3444 - Political Economy of Development [SOCS, GP] (3.0 cr)
- POL 3451W - 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)
- 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)
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
- AMIN 3501 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
- APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
- AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
- APEC 4525W - Federal Indian Policy [WI] (3.0 cr)
- GEOG 3311 - 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 3904 - Religion and the American Culture Wars [HIS] (3.0 cr)
or RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
or PHIL 3322W - Moral Problems of Contemporary Society [CIV, WI] (3.0 cr)
or PHIL 3785 - Persuasion and Political Propaganda (3.0 cr)
or POL 3785H - Persuasion and Political Propaganda (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)

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 1142. 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 5563 - Advanced Geographic Information Science (4.0 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 3350 - Epidemiology: People, Places, and Disease (2.0 cr)
• STAT 4101 - Theory of Statistics I (4.0 cr)
• STAT 4102 - Theory of Statistics I (4.0 cr)
• STAT 5101 - 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 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 5797 - History of Population [SOCS, GP] (3.0 cr)
or HIST 5797 - Methods of Population History (3.0 cr)
Twin Cities Campus
Sociology Minor

Program Type: Undergraduate minor related to major
Requirements for this program are current for Fall 2018
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 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 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 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 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 4109 - Domestic Criminal Violence (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 - Adolescents and the Legal System (3.0 cr)
• SOC 4149 - 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 Youth: Transition to Adulthood (3.0 cr)
• SOC 4703 - Contemporary American Culture [CIV] (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 5811 - Social Statistics for Graduate Students [MATH] (4.0 cr)
• SOC 5810 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• SOC 5211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 5309 - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
• SOC 5322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 53412 - Social Networking: Theories and Methods [TS] (3.0 cr)
• SOC 53505 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 53511 - World Population Problems [GP] (3.0 cr)
• SOC 53613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 53705 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 53861 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 53868 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 5411W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 5461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SOC 5411W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 54111 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• SOC 54511 - Sociology of Youth: Transition to Adulthood (3.0 cr)
• SOC 54703 - Contemporary American Culture [CIV] (3.0 cr)
• SOC 54821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
• SOC 55090 - Topics in Sociology (1.0 - 3.0 cr)
• SOC 55455 - Sociology of Education (3.0 cr)
• SOC 55811 - Social Statistics for Graduate Students [MATH] (4.0 cr)
• SOC 55310 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• SOC 55310H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• SOC 55211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 55322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 553412 - Social Networking: Theories and Methods [TS] (3.0 cr)
• SOC 553505 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 553511 - World Population Problems [GP] (3.0 cr)
• SOC 553613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 553613H - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 553613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• SOC 553617W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• SOC 553681 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 553705 - Migrations: People in Motion [GP] (3.0 cr)
• SOC 553711 - World Population Problems [GP] (3.0 cr)
• SOC 553511 - World Population Problems (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 4170 - Sociology of International Law: Human Rights, Trafficking, and Business Regulation [GP] (3.0 cr)
  or GLOS 4406 - Sociology of International Law: Trafficking, Human Rights, & Business Regulation [GP] (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
  or GLOS 4305 - Environment & Society: An Enduring Conflict [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 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)
  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)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 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 course(s) 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)
or SOC 3301W - Politics and Society [WI] (3.0 cr)
or SOC 3511W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
• SOC 3411W - Organizations and Society [WI] (3.0 cr)
or 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)
or SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3452 - Education and Society (3.0 cr)
or SOC 3701 - Sociology of Families [SOC, DSJ] (3.0 cr)
or SOC 3721 - Principles of Social Psychology (3.0 cr)
or SOC 4090 - Topics in Sociology (3.0 cr)
or SOC 4246 - Sociology of Health and Illness (3.0 cr)
or SOC 4241 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
or SOC 4511 - Sociology of Youth: Transition to Adulthood (3.0 cr)
or SOC 4703 - Contemporary American Culture [CIV] (3.0 cr)
or SOC 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
or SOC 5090 - Topics in Sociology (1.0 - 3.0 cr)
or SOC 5455 - Sociology of Education (3.0 cr)
or SOC 3211W - American Race Relations [DSJ, WI] (3.0 cr)
or AAS 3211W - American Race Relations [DSJ, WI] (3.0 cr)
or 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)
or SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
or SOC 3246H - Honors: Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
or SOC 5246 - Disease, Disasters, and Other Killers [HIS, ENV] (3.0 cr)
or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOC, DSJ, WI] (3.0 cr)
or AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOC, DSJ, WI] (3.0 cr)
or SOC 3251W - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
or AAS 3251W - Supercapitalism: Labor, Consumption & the Environment in the New Global Economy (3.0 cr)
or SOC 3222 - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
or GLOS 3222 - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
or SOC 3412 - Social Networking: Theories and Methods [TS] (3.0 cr)
or SOC 3412H - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
or 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 3503 - Asian American Identities, Families & Communities [SOC, DSJ] (3.0 cr)
or SOC 3503H - Asian American Identities, Families & Communities [SOC, DSJ] (3.0 cr)
or AAS 3503 - Asian American Identities, Families, & Communities [SOC, DSJ] (3.0 cr)
or SOC 3505 - Migrations: People in Motion [GP] (3.0 cr)
or GLOS 3705 - Migrations: People in Motion [GP] (3.0 cr)

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Information current as of August 24, 2018
• 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)
• SOC 3671 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
or GLOS 3911 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
• SOC 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 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
or GLOS 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 GLOS 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)
• Take 0 or more course(s) from the following:
  • SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
or SOC 3109 - 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)
• LCD 41xx Courses
  Take 2 or more course(s) totaling 6 or more credit(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 4109 - Domestic Criminal Violence (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 - Adolescents and the Legal System (3.0 cr)
  • SOC 4149 - 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)
or SOC 4102 - Criminology (3.0 cr)
or SOC 4102H - Honors: Criminology (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 4104 - 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 4104 - 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)
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 4 - 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 not 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] (4.0 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 - Senior Honors Proseminar I [WI] (3.0 cr)
SOC 4978V - Senior Honors 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 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 - American Race Relations [DSJ, WI] (3.0 cr)
  or AAS 3211W - American Race Relations [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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, 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)
• SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)
• SOC 4966W - Capstone Experience: Seminar [WI] (4.0 cr)
• SOC 4994W - Capstone Experience: Directed Research (1 cr.) [WI] (1.0 cr)
• SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
• SOC 4978V - Senior Honors 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 2018  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 54 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/](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.

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](http://www.umn.edu/admissions).  

**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](http://www.umn.edu/regents/academics/studentmanuals/). 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 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 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 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 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 Youth: Transition to Adulthood (3.0 cr)
- SOC 4703 - Contemporary American Culture [CIV] (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 - American Race Relations [DSJ, WI] (3.0 cr)
or AAS 3211W - American Race Relations [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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
or GLOS 3322W - Social Movements, Protests, and Change [CIV, WI] (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 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
or GLOS 3911 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (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 4305 - 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)
or 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)
or SOC 6411 - 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)
• 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)
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)
• LCD 41xx Courses
Take 2 or more course(s) from the following:
• SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
or SOC 4106 - Crime on TV (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 4 - 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 not 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] (4.0 cr)
SOC 4094W - Capstone Experience: Directed Research (4 cr.) [WI] (4.0 cr)
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
SOC 4xxx
SOC 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:

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 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 4042 - Accounting and Finance for Managers (3.0 cr)
- ABUS 4043 - 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 - American Indian Political Economy (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 - Applied Microeconomics: 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 3222W - 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 3380 - Developing Intercultural Competence (3.0 cr)
• OLPD 3601 - Introduction to Human Resource Development (3.0 cr)
• OLPD 3620 - Introduction to Training and Development (3.0 cr)
• OLPD 3640 - Introduction to Organization Development (3.0 cr)
• OLPD 3828 - Diversity in the Workplace (3.0 cr)
• OLPD 4401 - E-Marketing (3.0 cr)
• OLPD 4420 - 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 - Web Designer Introduction (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 Microeconomics: 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 Industrial Relations (3.0 cr)
  or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (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 5061 - 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)
• Handed 301W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
• MED 302W - Health Care in History II [HIS, WI] (4.0 cr)
• MED 3040 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
• MED 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 3620 - Introduction to Training and Development (3.0 cr)
• OLPD 3640 - 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 3206 - Foundations of Health Literacy (3.0 cr)
• PHAR 4200W - 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 3350 - 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 Service (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)
• APEC 3002 - Applied Microeconomics: Managerial Economics (4.0 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] (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
• GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
• GWSS 3590 - Topics: Social Change, Activism, Law, and Policy Studies (3.0 cr)
• HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity [DSJ] (4.0 cr)
• ID 3208 - 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 - Religion, Ethics, and Educational Policy [CIV] (3.0 cr)
• OLDP 3380 - 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 - Politics of 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 4485 [Inactive] [CIV] (3.0 cr)
• POL 4495 - Politics of Family, Sex, and Children [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 3562W - Technical and Professional Writing [WI] (4.0 cr)
or WRIT 3562V - Honors: Technical and Professional Writing [WI] (4.0 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)
• 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)  
• AMIN 3501 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)  
  or  
POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)  
• AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)  
  or  
POL 4507 - Law, Sovereignty, and Treaty Rights (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 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)  
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)  
  or  
POL 3785H - Persuasion and Political Propaganda (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 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 3950 - 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 5865 - Advanced Psychological and Educational Measurement (4.0 cr)
• PUBH 3350 - 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 5011 - Theory of Statistics I (4.0 cr)
• STAT 5012 - 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)
• 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 2018
• 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 4109 - Domestic Criminal Violence (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 - Adolescents and the Legal System (3.0 cr)
• SOC 4149 - 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 4170 - Sociology of International Law: Human Rights, Trafficking, and Business Regulation [GP] (3.0 cr)
or GLOS 4406 - Sociology of International Law: Trafficking, Human Rights, & Business Regulation [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 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 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 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 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 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 3572 - 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 4109 - Domestic Criminal Violence (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 - Adolescents and the Legal System (3.0 cr)
• SOC 4149 - 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 Youth: Transition to Adulthood (3.0 cr)
• SOC 4703 - Contemporary American Culture [CIV] (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 5811 - Social Statistics for Graduate Students [MATH] (4.0 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 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 3211W - American Race Relations [DSJ, WI] (3.0 cr)
or AAS 3211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
or AAS 3246 - Diseases, Disasters & Other Killers [HIS, ENV] (3.0 cr)
• SOC 3215W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
or SOC 3215V - Honors: 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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
or GLOS 3322W - Social Movements, Protests, and Change [CIV, WI] (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 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 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 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
or GLOS 3911 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (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 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 4170 - Sociology of International Law: Human Rights, Trafficking, and Business Regulation [GP] (3.0 cr)
or GLOS 4406 - Sociology of International Law: Trafficking, Human Rights, & Business Regulation [GP] (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 - Environment & Society: An Enduring Conflict [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)
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 2018
• 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)
- 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)

**Option 2**
- 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)
- PORT 3001 - Portuguese for Spanish Speakers (4.0 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 Service (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 - Topics in Lusophone Cultures (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. 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 Service (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 5xxx
  - OR SPAN 5xxx
  - OR SPPT 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:
• 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 2018
- 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)
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

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)
or SPAN 3404 - Medical Spanish and Community Health Service (3.0 cr)
or Participation in the Community Engagement Scholars Program, with a focus on opportunities to engage with native Spanish speakers (requires 400 service hours)
or 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 2018
• 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 Service (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.

or 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 Service (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 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 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 2018
• 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 Service (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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 36 to 37
• Degree: Bachelor of Arts

The 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 seek to 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)

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.

Entry-level 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

Speech-Language-Hearing Sciences
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2018
• 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.

Minor Courses
Students may need instructor permission to take 5xxx courses.
Take 14 or more credit(s) from the following:
• SLHS 3xxx
• SLHS 4xxx
• SLHS 5xxx
• 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)

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Information current as of August 24, 2018
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 2018
- 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
- Complete STAT 3011 or STAT 3021 with a grade of C- or better in order to declare the statistical practice BA major.
- Take exactly 1 course(s) totaling 3 - 4 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)

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)
  - MATH 1371 - CSE Calculus I [MATH] (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)
• Choose one Theory of Statistics two-course sequence. Note: Students interested in the BA/MS in biostatistics sub-plan should complete STAT 4101/4102 or STAT 5101/5102. In order to apply for admission to the sub-plan, these courses should be completed with a B or higher by the end of a student’s 3rd year in the BA degree.

Option 1
STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)

Option 2
Note: These courses require MATH 2263 or MATH 2374 as a prerequisite.
STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)

Option 3
Note: These courses require MATH 2263 or MATH 2374 as a prerequisite.
MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)

Electives
Take a total of 11 credits, at least 5 of which must be listed below as STAT 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 3501 - Internship in Statistical Practice (1.0 cr)
• STAT 5031 - Statistical Methods for Quality Improvement (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 (4.0 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 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 4041H - 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 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 5403 - Computational Complexity (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 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 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)
• 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 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 5335 - Geometry I (4.0 cr)
• MATH 5336 - Geometry II (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 5585 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5586 - Introduction To Numerical Methods II (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)
• 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)
• MATH 5711 - Linear Programming and Combinatorial Optimization (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)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
  or HSCI 4321 - History of Computing [TS, HIS] (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 BA 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.

**BA/MS Biostatistics**
The College of Liberal Arts and the Division of Biostatistics of the School of Public Health offer an early-admission opportunity for eligible University of Minnesota Statistics BA and BS students also interested in completing the MS in biostatistics.

Interested statistics undergraduates should contact the School of Statistics advisor for more information. Students should apply during the fall semester of their junior year, with the intent of beginning the program the fall of their senior year.

Students admitted to the MS in Biostatistics sub-plan must maintain timely degree progress to ensure all undergraduate degree requirements are completed by the end of their fourth year. Students who are not successful in completing the required SPH courses at the end of their senior year may be placed on probation or dismissed from SPH.

To be considered for admission to the joint program, prospective students must be officially admitted to an undergraduate major (BA or
BS) in the School of Statistics in the College of Liberal Arts at the University of Minnesota. All prerequisite courses should be completed with a B or better by the end of a student's junior year. Students should apply during the fall semester of their junior year with the intent of beginning the program the fall of their senior year.

Admitted students will take 9 Biostatistics course credits in their senior year (year 4, undergraduate credit), which will be applied to their MS degree. They will also take the remainder of the courses required to complete the bachelor's degree. The year 4 biostatistics courses include the core biostatistical methods courses (PubH 7405 and 7406, 8 credits total) and a course on essential skills for biostatistical practice (1 credit), which will teach students career development skills and "job-relevant" computing and communications skills.

Prerequisite Courses
All prerequisite courses should be completed with a B or better by the end of Year 3 in the BA degree. Many prerequisite courses are already required for the BA degree, but it is important for students planning to apply to the sub-plan that they be taken in a timely manner, while considering the grade standards for admission to the sub-plan.

Take 0 - 6 course(s) from the following:

Statistical Theory
Take 2 courses for a total of 8 credits. In rare cases, students may be permitted to take STAT 5101/5102, or STAT 4101/4102, during their senior year concurrently with the usual Year 4 joint BA/MS program requirements.

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)

Calculus
Take 3 courses for a total of 12 credits.
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)

Linear Algebra
Take 1 course for 4 credits.
CSCI 2033 - Elementary Computational Linear Algebra (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 4242 - Applied Linear Algebra (4.0 cr)

Statistical Programming
Experience in basic programming is strongly recommended; exposure to programming in a statistical software package (R or SAS) is preferred.

Year 4 Courses
The following courses should be taken during the 4th year of a student's BA degree, in addition to the other courses required to complete the BA.
Take PUBH 6460 and PUBH 7405 for a total of 5 credits during fall of year 4.
PUBH 6460 - Essential Skills for Biostatistical Practics (1.0 cr)
PUBH 7405 - Biostatistics: Regression (4.0 cr)
Take PUBH 7406 for 4 credits during spring of year 4.
PUBH 7406 - Advanced Regression and Design (4.0 cr)
**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 2018  
- 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 is intended for students who express interest in graduate education in statistics or a related area. 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](https://www.admissions.umn.edu/).

**Required prerequisites**  
**Preparatory Course**  
Complete STAT 3011 or STAT 3021 with a grade of C- or better in order to declare the Statistical Science BS major.  
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](https://www.umn.edu/). 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)
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
Take a total of 14 credits, at least 4 credits of which must be listed below as STAT 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 3501 - Internship in Statistical Practice (1.0 cr)
- STAT 5031 - Statistical Methods for Quality Improvement (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 4041H - 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)
• 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 5403 - Computational Complexity (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 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 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)
• 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 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 5335 - Geometry I (4.0 cr)
• MATH 5336 - Geometry II (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)
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.

BS/MS in Biostatistics
The College of Liberal Arts and the Division of Biostatistics of the School of Public Health offer an early-admission opportunity for eligible University of Minnesota Statistics BA and BS students also interested in completing the MS in Biostatistics.

Interested statistics undergraduates should contact the School of Statistics advisor for more information. Students should apply during the fall semester of their junior year, with the intent of beginning the program the fall of their senior year.

Students admitted to the MS in Biostatistics sub-plan must maintain timely degree progress to ensure all undergraduate degree requirements are completed by the end of their fourth year. Students who are not successful in completing the required SPH courses at the end of their senior year may be placed on probation or dismissed from SPH.

To be considered for admission to the joint program, prospective students must be officially admitted to an undergraduate major (BA or BS) in the School of Statistics in the College of Liberal Arts at the University of Minnesota. All prerequisite courses should be completed with a B or better by the end of a student's junior year. Students should apply during the fall semester of their junior year with the intent of beginning the program the fall of their senior year.
Admitted students will take 9 biostatistics course credits in their senior year (year 4, undergraduate credit), which will be applied to their MS degree. They will also take the remainder of the courses required to complete the bachelor's degree. The year 4 biostatistics courses include the core biostatistical methods courses (PubH 7405 and 7406, 8 credits total) and a course on essential skills for biostatistical practice (1 credit), which will teach students career development skills and “job-relevant” computing and communications skills.

Prerequisite Courses
All prerequisite courses should be completed with a B or better by the end of Year 3 in the BS degree. Many prerequisite courses are already required for the BS degree, but it is important for students planning to apply to the sub-plan that they be taken in a timely manner, while considering the grade standards for admission to the sub-plan.
Take 0 - 6 course(s) from the following:

Statistical Theory
Take 2 courses for a total of 8 credits. In rare cases, students may be permitted to take STAT 5101/5102, or STAT 4101/4102, during their senior year concurrently with the usual Year 4 joint BA/MS program requirements.
- 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)

Calculus
Take 3 courses for a total of 12 credits.
- 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)

Linear Algebra
Take 1 course for 4 credits.
- CSCI 2033 - Elementary Computational Linear Algebra (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 4242 - Applied Linear Algebra (4.0 cr)

Statistical Programming
Experience in basic programming is strongly recommended; exposure to programming in a statistical software package (R or SAS) is preferred.

Year 4 Courses
The following courses should be taken during the 4th year of a student’s BS degree, in addition to the other courses required to complete the BS.
Take PUBH 6460 and PUBH 7405 for a total of 5 credits during Fall of Year 4.
- PUBH 6460 - Essential Skills for Biostatistical Practices (1.0 cr)
- PUBH 7405 - Biostatistics: Regression (4.0 cr)
Take PUBH 7406 for 4 credits during Spring of Year 4.
- PUBH 7406 - Advanced Regression and Design (4.0 cr)
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 2018
• 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 - Internship in Statistical Practice (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 - Statistical Methods for Quality Improvement (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 - 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 5101 - Theory of Statistics I (4.0 cr)
  or STAT 5102 - Theory of Statistics II (4.0 cr)

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Information current as of August 24, 2018
STAT 5102 - Theory of Statistics II (4.0 cr)

or MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

STAT 5102 - Theory of Statistics II (4.0 cr)
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 2018
- 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.

Effective fall 2001, the Studies in Cinema and Media Culture BA replaced the Film Studies BA. Students who declared the Film Studies BA will be transferred to the SCMC BA. The departmental advisor can help students transfer programs.

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
Foundation courses teach students the histories, methodologies, and debates in the study of cinema and media culture. They are sequentially arranged so that students learn the necessary skills to progress from one stage of their undergraduate career to the next and to have the knowledge to move between the various departments that support the major.
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:

- SCMC 1201W - Cinema [AH, WI] (4.0 cr)
- or CSCL 1201W - 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)
- ARTH 1921W - Introduction to Film Study [AH, 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)
- ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)

**Understanding Context: Cinema and Media Representations, Mediations, and Industries**

Context courses examine how cinema and media are produced, received and interpreted. Students examine how discourses of race, class, gender, sexuality, ethnicity and indigeneity are constructed, and critiqued, through cinema and media. Courses also focus on technological and institutional histories that condition the development of cinema and media. Context courses help students to understand the historiography of cinema and media and how thus is a field of active debate and analysis.

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] (4.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (4.0 cr)
- CHIC 3223 - Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
- COMM 3211 - Introduction to Media Studies (3.0 cr)
- COMM 3231 - Reality TV: History, Culture, and Economics (3.0 cr)
- COMM 5261 - Political Economy of Media Culture (3.0 cr)
- CSCL 3221 - On Television [CIV] (3.0 cr)
- JOUR 3745 - Mass Media and Popular Culture [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)
- CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
- or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
- CSCL 3220W - Screen Cultures [AH, TS, WI] (3.0 cr)
- or SCMC 3220W - Screen Cultures [AH, TS] (3.0 cr)

**Making Cinema and Media: Production and Training Courses**

Students in SCMC can take production courses from across CLA depending on their interests. These courses can include narrative, experimental and documentary approaches to cinema as well as interactive and multimedia practices. Students in SCMC who are interested in pursuing a production-rich curriculum are encouraged to meet with the SCMC undergraduate advisor and the film studies coordinator to chart a path that will best support a students creative goals.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:

- ARTS 1704 - Introduction to Moving Images [AH] (4.0 cr)
- ARTS 3230 - Sound Art (4.0 cr)
- ARTS 3240 - Making Art Interactive (4.0 cr)
- ARTS 3710 - Black and White Darkroom Photography (4.0 cr)
- COMM 3201 - Introduction to Electronic Media Production (4.0 cr)
- COMM 3204 - Advanced Electronic Media Production (4.0 cr)
- COMM 4204 - Producing for Television: Theory and Practice (4.0 cr)
- ENGW 4205 - Screenwriting (3.0 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)
- ARTS 3740 - Lighting and the Constructed Image (4.0 cr)
- or ARTS 5740 - Lighting and the Constructed Image (4.0 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)
- ARTS 3770 - Animation (4.0 cr)
- or ARTS 5770 - Animation (4.0 cr)
- 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**

SCMC approaches cinema and media from a cross-cultural and global perspective that highlights the multiple traditions and...
movements that offer a larger picture of the vibrant and multi-vocal world of cinema and media. Courses in this rubric examine national traditions as well as oppositional, avant-garde, or counter-hegemonic approaches to film, video, or new media. Students also investigate transnational and international traditions of cinema and media production, distribution, and consumption.

Take exactly 1 course(s) totaling 3 - 4 credit(s) from the following:
- AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3556 - Korean Film [AH, GP] (3.0 cr)
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
- CSCL 5411 - Avant-Garde Cinema (4.0 cr)
- FREN 3451 - North African Cinema (3.0 cr)
- GER 3604W - Introduction to German Cinema [AH, GP, WI] (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)
- CSCL 3221 - On Television [CIV] (3.0 cr)
- CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
- GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)
- AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (4.0 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 - Reality TV: History, Culture, and Economics (3.0 cr)
- COMM 5261 - Political Economy of Media Culture (3.0 cr)
- CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
- CSCL 3221 - On Television [CIV] (3.0 cr)

Analyzing Cinema and Media: Courses in Theory, Method, and Critique

Analysis courses are just that: courses in which students develop the tools to analyze film and media. Here students learn about the multiple theories of cinema and media as well as their historical and social origins. The courses in this rubric give students the conceptual tools that they need in order to view, discuss, and produce cinema and media in a critical, constructive, and nuanced manner.

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 4245 - Critical Television Studies (3.0 cr)
- COMM 5211 - Critical Media Studies: Theory and Methods (3.0 cr)
- CSCL 3221 - On Television [CIV] (3.0 cr)
- CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 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)
- CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
  or SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)

Electives

The electives within SCMC are drawn from across the College and represent a broad range of issues, histories, and practices within cinema and media cultures. Students are encouraged to explore this breadth while, at the same time, developing a personalized set of interests. To this end, students should consult regularly with the SCMC Academic Advisor, the Film Studies Coordinator, and faculty members.

Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3556 - Korean Film [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] (4.0 cr)
- AMST 3253W - American Popular Culture and Politics: 1940 to the Present [HIS, CIV, WI] (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 - Reality TV: History, Culture, and Economics (3.0 cr)
- COMM 5261 - Political Economy of Media Culture (3.0 cr)
- CSCL 3211 - Oppositional Cinemas [GP] (4.0 cr)
- CSCL 3221 - On Television [CIV] (3.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 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)
• JOUR 3796 - Media and Politics (3.0 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)
• SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
• SCMC 5002 - Advanced Film Analysis (4.0 cr)
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
• AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
• ARTS 3750 - Narrative Digital Filmmaking (4.0 cr)
• ARTS 3760 - Experimental Film and Video (4.0 cr)
• ARTS 5760 - Experimental Film and Video (4.0 cr)
• CSCL 4921 - History of Computing [TS, HIS] (3.0 cr)
• CSCL 4932 - History of Computing [TS, HIS] (3.0 cr)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• ALL 3250 - Topics in Asian Film and Media (3.0 cr)
• ALL 5250 - Advanced Topics in Asian Film and Media (3.0 cr)

1xxx-level Courses
No more than 1 elective can be at the 1xxx level. Take no more than 1 course(s) from the following:
• ALL 1001 - Asian Film and Animation [AH, GP] (3.0 cr)
• ARTS 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)
• CSCL 1201W - Cinema [AH, WI] (4.0 cr)
• SCMC 1201W - 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)

Directed Studies, Internships, and Topics
Directed studies, topics courses, and internships allow students to pursue individualized research, study, and work projects. To pursue a directed study, students must propose a topic and course of study to a faculty member. A faculty/student contract must be completed and submitted. Students interested in internships should discuss possibilities with the SCMC academic advisor or the film studies coordinator. They are also encouraged to apply for the CLA Internship Scholarship.
Take no more than 3 course(s) from the following:
Directed Studies/Internship
Students may count a maximum of 3 directed studies courses, internships, and topics courses toward the major. No more than 2 directed studies/internships may count towards the major.
Take no more than 2 course(s) from the following:
• 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 3993 - Directed Study (1.0 - 3.0 cr)
• CSCL 5944H - Honors Thesis (3.0 cr)
• CSCL 4993 - Directed Study (1.0 - 3.0 cr)
• CSCL 5993 - Directed Study (1.0 - 3.0 cr)

Topics
No more than 2 topics courses may count towards the major.
Take no more than 2 course(s) from the following:
• ALL 3250 - Topics in Asian Film and Media (3.0 cr)
• ALL 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)
• FRIT 5850 - 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)
• SMC 3910 - Topics in Studies in Cinema and Media Culture (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 students work and development within SCMC and will allow them to pursue individualized interests through an advanced curriculum. When choosing a capstone option students should meet 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
SCMC 5001 is oriented toward contemporary issues in media and cinema and how these are informed by larger traditions.

SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)

or SCMC 5002
SCMC 5002 focuses on a comprehensive analysis of the history of film criticism and its theoretical and methodological underpinnings.

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:
• ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
• AMST 3252W - American Popular Culture and Politics: 1900 to 1940 [HIS, CIV, WI] (4.0 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 [WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• SMC 3001W - History of Cinema and Media Culture [WI] (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)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 3374V - Honors: The City in Film [AH, WI] (4.0 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 2018
• 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.

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.

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)
  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)

Electives
Take 14 or more credit(s) from the following:
• AFRO 3654 - African Cinema [AH, GP] (3.0 cr)
• ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
• ALL 3456 - Japanese Film [GP] (3.0 cr)
• ALL 3556 - Korean Film [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] (4.0 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 3211 - Oppositional Cinemas [GP] (4.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3221 - On Television [CIV] (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)
• JOUR 3796 - Media and Politics (3.0 cr)
• PORT 3800 - Film Studies in Portuguese (3.0 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)
• SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
• SCMC 5002 - Advanced Film Analysis (4.0 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)
• 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)
• CSCL 3210 - Cinema and Ideology [AH] (4.0 cr)
  or SCMC 3210 - Cinema and Ideology [AH] (4.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 cr)
• Directed Studies, Internships, and Topics
  Students may count a maximum of 2 directed studies courses, internships, and topics courses toward the minor.
  Take no more than 2 course(s) from the following:
  Directed Studies/Internship
  No more than 1 directed studies/internships may count towards the minor.
  Take no more than 1 course(s) from the following:
  • 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 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
  No more than 1 topics courses may count towards the major.
  Take no more than 1 course(s) from the following:
  • ALL 3250 - Topics in Asian Film and Media (3.0 cr)
  • ALL 5250 - Advanced Topics in Asian Film and Media (3.0 cr)
  • ENGL 3040 - Studies in Film (3.0 cr)
  • FRRIT 3850 - Topics in French and Italian Cinema (3.0 cr)
  • FRRIT 5850 - Topics in French and Italian Cinema (3.0 cr)
  • GER 5630 - Topics in German Cinema (3.0 cr)
  • SCMC 3910 - Topics in Studies in Cinema and Media Culture (3.0 cr)
  • Other topics courses approved by the Film Studies Coordinator, based on the specific topic
Twin Cities Campus
Swedish Minor
German, Scandinavian, & Dutch
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2018
• Required credits in this minor: 16 to 36

The minor allows students to study the language, literature, and culture of Sweden and the other Nordic countries.

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 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.

Students are required to complete 4 semester(s) of Swedish. with a grade of C-, or better, or demonstrate proficiency in the language(s) as defined by the department or college.

At least one upper-division course 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 3xxx
• SCAN 4xxx
• SCAN 5xxx
• Directed Study
Take no more than 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 2018
- 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 2018
- 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 4196 - 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 3315 - Writing on Issues of Science and Technology [WI] (3.0 cr)
- WRIT 3344W - 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, 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

Capstone electives are recommended 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:

- 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, 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 3701W - Rhetorical Theory for Writing Studies [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)

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Information current as of August 24, 2018
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)
• UC 3201 - Web Designer Introduction (4.0 cr)
• HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
  or HSCI 5331 - Technology and American Culture (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 4321 - History of Computing [TS, HIS] (3.0 cr)
  or HSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
• HSCI 3505 - Intro to Human-Centered Design (3.0 cr)
  or HSCI 5505 - Human-Centered Design - Principles and Applications (3.0 cr)
• HUMF 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
  or KIN 5001 - Foundations of Human Factors/Ergonomics (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 1009 - Human Health and Disease (3.0 cr)
• 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 2100 - 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 - Scientific Reasoning (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)
• CHEM 1071H - Honors Chemistry I Laboratory [PHYS] (3.0 cr)
• CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
• 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 3100 - Mind and Brain (3.0 cr)
  • PHAR 3206 - Foundations of Health Literacy (3.0 cr)
  • PHAR 3601 (Inactive) (3.0 cr)
  • PHAR 4200W - 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 1201 - Political Ideas and Ideologies [HIS, CIV] (4.0 cr)
  • POL 1001 - American Democracy in a Changing World [SOCS] (4.0 cr)
  • PHAR 3206 - Foundations of Health Literacy (3.0 cr)
  • PHAR 3601 (Inactive) (3.0 cr)
  • PHAR 4200W - 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 1201 - Political Ideas and Ideologies [HIS, CIV] (4.0 cr)
  • POL 1001 - American Democracy in a Changing World [SOCS] (4.0 cr)
  • PHAR 3206 - Foundations of Health Literacy (3.0 cr)
  • PHAR 3601 (Inactive) (3.0 cr)
  • PHAR 4200W - 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 1201 - Political Ideas and Ideologies [HIS, CIV] (4.0 cr)
  • POL 1001 - American Democracy in a Changing World [SOCS] (4.0 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 and Ideologies [HIS, CIV] (4.0 cr)
• POL 1001 - American Democracy in a Changing World [SOCS] (4.0 cr)
• POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (4.0 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)
Environmental Science

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

**Lower Division**
Take at most 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** - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
  or **GEOG 1425** - Biogeography of the Global Garden [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] (4.0 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 3303** - 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** - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
  or **ESPM 3601** - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)

• **GLOS 4305** - Environment & Society: An Enduring Conflict [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 2018
- Required credits in this minor: 16 to 18

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 4196 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 2018
- 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 - Beginning Acting: Fundamentals of 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 exactly 2 course(s) totaling exactly 6 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 of the form of, but are not limited to: a research paper, an internship with an arts organization, creation of an original work of art, 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. Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- TH 4901 - Senior Seminar (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 - Blacks in American Theatre [WI] (3.0 cr)
- TH 5182W - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or AFRO 5182W - Contemporary Black Theatre: 1960-Present [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 3152** - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)
  or **TH 5152** - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)
  or **GLOS 3152** - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)
  or **GLOS 5152** - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (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** - Blacks in American Theatre [WI] (3.0 cr)
- **TH 5182W** - Contemporary Black Theatre: 1960-Present [WI] (3.0 cr)
  or **AFRO 5182W** - Contemporary Black Theatre: 1960-Present [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** - Projection Media Design, Creation, and Development (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)
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 Mentoring (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 3365 - 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 2018  
- 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 - Beginning Acting: Fundamentals of 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 3512 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)  
  or TH 5152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)  
  or GLOS 3152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (3.0 cr)  
  or GLOS 5152 - Global Avant-Gardes: Theatre, Music, Modernity [HIS] (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)
University Honors Program

Program Type: Other

Requirements for this program are current for Fall 2018

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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 36 to 43
- 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 alumni 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,
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:

**Introductory Courses in Statistics & Research**
Take 0 - 1 course(s) from the following:
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
- EPSY 5261 - Introductory Statistical Methods (3.0 cr)
- 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)
- PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
- or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 5531 - Numerical Spatial Analysis (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)
- 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)
- 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 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- 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 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] (4.0 cr)
  or GEOG 5401 - Geography of Environmental Systems and Global Change (4.0 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 - 8 credit(s) from the following:
  • DES 3331 - Street Life Urban Design Seminar (3.0 cr)
  • GEOG 3212 - Producing India (3.0 cr)
  • GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 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 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
  • URBS 3871 - A Suburban World (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 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
    or GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
  • ARCH 3412 - Architectural History Since 1750 [HIS, GP] (3.0 cr)
    or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
  • HIST 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
    or EAS 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
    or ALL 3371 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)

Urban Studies Colloquia
  Any combination of credits from 3201 and 3202 is acceptable.
  Take 2 or more credit(s) from the following:
  • URBS 3201 - Urban Studies Colloquium (1.0 cr)
  • URBS 3202 - 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 3900 - 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 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)
• 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] (4.0 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 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
  or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 3374V - Honors: The City in Film [AH, WI] (4.0 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)
  or LAS 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 concentration tracks. Some 5xxx-level courses will require departmental consent.

Social and Cultural Analysis of Urban Life

This is Track A.
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
• AFRO 5910 - Topics in African American and African Studies (2.0 - 4.0 cr)
• AMIN 4511 - American Indian Political Economy (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] (4.0 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 3739 - 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 and Programs in Social Welfare (3.0 - 4.0 cr)
• URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• 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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
• GEOG 5374 - The City in Film (4.0 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)
• 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)
• 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-

Urban Political Economy

This is Track B.
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 3331 - Geography of the World Economy [SOCS, GP] (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 5004 - Introduction to 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 5261 - Housing Policy (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 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (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)
• BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
  or GEOG 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
This is Track C.
Take 3 or more course(s) totaling 9 - 11 credit(s) from the following:
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, 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 5212 - Transportation Policy, Planning, and Deployment (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)
• 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 5013 - Law and Urban Land Use (1.5 cr)
• PA 5212 - Managing Urban Growth and Change (3.0 cr)
• PA 5221 - Transit Planning and Management (3.0 cr)
• PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• CEGE 5211 - Traffic Engineering (3.0 cr)
  or CEGE 4211 - Traffic Engineering (3.0 cr)
• APEC 5651 - Economics of Natural Resource and Environmental Policy (3.0 cr)
  or PA 5722 - Economics of Natural Resource and Environmental Policy (3.0 cr)

- OR -

International Urban Issues
This is Track D.
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 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (3.0 cr)
• GEOG 3212 - Producing India (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, GP] (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)
• 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 3464 - Politics of Inequality (3.0 cr)
• POL 3799 - Politics of Race, Class, and Ethnicity (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)
• 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)
• 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 3397 - 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)
• 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)
• GLOS 3422 - 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (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)
• 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)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 42 to 51
- 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
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.

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.

Introductory Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
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 - 1 course(s) from the following:
• EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
• EPSY 5261 - Introductory Statistical Methods (3.0 cr)
• 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 3021 - Introduction to Probability and Statistics (3.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (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)
• 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 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
• 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 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] (4.0 cr)
or GEOG 5401 - Geography of Environmental Systems and Global Change (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 3212 - Producing India (3.0 cr)
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 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 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• URBS 3871 - A Suburban World (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 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
  or GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
• ARCH 3412 - Architectural History Since 1750 [HIS, GP] (3.0 cr)
  or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
• ALL 3371 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
  or EAS 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)
  or HIST 3479 - History of Chinese Cities and Urban Life (3.0 - 4.0 cr)

Urban Studies Colloquia
Any combination of credits from 3201 and 3202 is acceptable.
Take 2 or more credit(s) from the following:
• URBS 3201 - Urban Studies Colloquium (1.0 cr)
• URBS 3202 - 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 3900 - 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 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)
• 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] (4.0 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 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)

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Information current as of August 24, 2018
Urban Studies Concentrations

Students are required to complete three courses for a minimum of 9 credits from one of the four concentration tracks. Some 5xxx-level courses will require departmental consent.

Social and Cultural Analysis of Urban Life

This is Track A.

Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:

- AFRO 5910 - Topics in African American and African Studies (2.0 - 4.0 cr)
- AMIN 4511 - American Indian Political Economy (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] (4.0 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 3739 - 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 and Programs in Social Welfare (3.0 - 4.0 cr)
- URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (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)
- AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
- HIST 3865 - African American History, 1865 to Present (3.0 cr)
- AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
- HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (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 Americas & 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)

-OR-

Urban Political Economy

This is Track B.

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 3331 - Geography of the World Economy [SOCS, GP] (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 5004 - Introduction to 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 5261 - Housing Policy (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 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
• URB 3871 - Fundamentals of Transit (3.0 cr)
• URB 3861 - Financing Cities (3.0 cr)
• URB 3871 - A Suburban World (3.0 cr)
• BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
• LA 3514 - Making the Mississippi [CIV] (3.0 cr)
• LA 5514 - Making the Mississippi (3.0 cr)

-OR-

Urban Infrastructure and Environment

This is Track C.
Take 3 or more course(s) totaling 9 - 11 credit(s) from the following:
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, 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 5212 - Transportation Policy, Planning, and Deployment (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)
• 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 5013 - Law and Urban Land Use (1.5 cr)
• PA 5212 - Managing Urban Growth and Change (3.0 cr)
• PA 5231 - Transit Planning and Management (3.0 cr)
• PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• CEGE 5211 - Traffic Engineering (3.0 cr)
• APEC 5651 - Economics of Natural Resource and Environmental Policy (3.0 cr)
• PA 5722 - Economics of Natural Resource and Environmental Policy (3.0 cr)

-OR-

International Urban Issues

This is Track D.
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 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (3.0 cr)
• GEOG 3212 - Producing India (3.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3373 - Changing Form of the City [HIS, GP] (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)
• 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 3464 - Politics of Inequality (3.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (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)
• 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)
• 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 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)
• 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)
• GLOS 3422 - 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (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)
• 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)
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 2018
• 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.
Take 6 or more credit(s) including 1 or more sub-requirements(s) from the following:

Social and Cultural Analysis of Urban Life
Take 0 - 6 credit(s) from the following:
• AFRO 5910 - Topics in African American and African Studies (2.0 - 4.0 cr)
• AMIN 4511 - American Indian Political Economy (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] (4.0 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 3739 - 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 and Programs in Social Welfare (3.0 - 4.0 cr)
• URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• 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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (4.0 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)
• 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)
• 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)

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 3331 - Geography of the World Economy [SOCS, GP] (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 5004 - Introduction to 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 5261 - Housing Policy (3.0 cr)
• PA 5280 - 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 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (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)
• BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
or GEOG 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 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, 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 5212 - Transportation Policy, Planning, and Deployment (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)
• 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 5013 - Law and Urban Land Use (1.5 cr)
• PA 5212 - Managing Urban Growth and Change (3.0 cr)
• PA 5231 - Transit Planning and Management (3.0 cr)
• PA 5232 - Transportation Policy, Planning, and Deployment (3.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• CEGE 5211 - Traffic Engineering (3.0 cr)
or CEGE 4211 - Traffic Engineering (3.0 cr)
or APEC 5651 - Economics of Natural Resource and Environmental Policy (3.0 cr)
or PA 5722 - Economics of Natural Resource and Environmental Policy (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 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (3.0 cr)
- GEOG 3212 - Producing India (3.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GEOG 3373 - Changing Form of the City [HIS, GP] (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)
- 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)
- POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- POL 3464 - Politics of Inequality (3.0 cr)
- POL 3739 - Politics of Race, Class, and Ethnicity (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)
- 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)
- 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)
- 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)
- GLOS 3422 - 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (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)
- 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)

Urban Studies Colloquia
Any combination of credits from 3201 and 3202 is acceptable.
Take 2 or more credit(s) from the following:
- URBS 3201 - Urban Studies Colloquium (1.0 cr)
- URBS 3202 - 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 3900 - Urban Studies Internship Seminar (2.0 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 2018
• 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.

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 1401W - Honors Physics I [PHYS, WI] (4.0 cr)
or PHYS 1501V - Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)
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)
or PHYS 1502V - Honors Introduction to Electricity and Magnetism [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.

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 3933 - 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 4295. Honors students may choose to take AEM 5247 or 5253.
Take 0 or more course(s) from the following:
• AEM 4295 - Problems 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 4495. 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 4495 - Problems in Aerospace Systems (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 4595. 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 4595 - Problems in Mechanics and Materials (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 4894H 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 4894H - 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)
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.
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 84 to 86
- 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.

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)
- PHYS 1501V - Honors Introduction to Mechanics [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)
- PHYS 1502V - Honors Introduction to Electricity and Magnetism [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
Program Requirements
All freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

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)

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)
PHYS 4303 - Electrodynamics and Waves (3.0 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)

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)
or PHYS 4121W - History of 20th-Century Physics [WI] (3.0 cr)

Technical Electives
All students must select at least 16 credits from the following (in consultation with your advisor). Some courses have been clustered into areas of interest to help with the selection of technical electives.
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 [WI] (3.0 cr)
• PHYS 4611 - Introduction to Space Physics (3.0 cr)
• PHYS 4621 - Introduction to Plasma Physics (3.0 cr)
• MATH 2283 - Sequences, Series, and Foundations (3.0 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 - Planets of the Solar System (3.0 cr)
• EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
• EE 3006 - Fundamentals of Electrical Engineering Laboratory (1.0 cr)

**Data Analysis Specialist**
Students interested in careers with corporate and government labs and research divisions, such as programming, image processing, laboratory instrumentation, and general data analysis are suggested to take elective credits from the following:

Take 0 or more course(s) from the following:

• AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
• CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
• EE 3005 - Fundamentals of Electrical Engineering (4.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 cr)

**Professional Astronomer**
Students interested in graduate school in astronomy are recommended to take elective credits including the following:

Take 0 or more course(s) from the following:

• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4201 - Statistical and Thermal Physics (3.0 cr)

**Secondary Education**
Students interested in entry to a master's program for secondary education are recommended to take elective credits including the following, as well as complete 100 hours of in-class experience across at least two semesters:

Take 0 or more course(s) from the following:

• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
• HSCI 1814 - Revolutions in Science: The Babylonians to Newton [HIS, GP] (3.0 - 4.0 cr)
  or HSCI 4121W - History of 20th-Century Physics [WI] (3.0 cr)
• PHIL 1005 - Scientific Reasoning (4.0 cr)
  or PHIL 3601W - Scientific Thought [WI] (4.0 cr)
• AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
  or PHYS 3994 - Directed Research (1.0 - 5.0 cr)
  or PHYS 4994 - Directed Research (1.0 - 5.0 cr)
• This course pair replaces AST 4994 in the student's program:
  • PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
  PHYS 4052W - Methods of Experimental Physics II [WI] (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 2018
- 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.

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 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)
Linear Algebra & Differential Equations OR Multivariable Calculus
Students must take one linear algebra with differential equations course OR one multivariable calculus course to gain admission to upper division, but they must ultimately take one from each group (one linear algebra/differential equations and one multivariable calculus) to graduate:
  [MATH 2243 or MATH 2373] or [MATH 2263 or MATH 2374]

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)
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

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)

Engineering and Science Electives (ESE)

A maximum of 10 credits of pure science courses may count toward the ESE requirement. The remaining 17 credits must be engineering or technical courses. At least 19 credits must be 4000-level or higher. Students may take a maximum of 3 credits of lower division courses and 6 credits of directed research courses. A specific emphasis must be declared. Students are encouraged to meet with an academic advisor prior to selecting elective courses.

Cell and Molecular Bioengineering

Take 0 or more course(s) totaling 0 or more credit(s) from the following:

- BIOC 3021 - Biochemistry (3.0 cr)
- BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- BIOC 5351 - Protein Engineering (3.0 cr)
- BIOC 5352 - Biotechnology and Bioengineering for Biochemists (3.0 cr)
- BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
- BMEN 5001 - Advanced Biomaterials (3.0 cr)
- BMEN 5041 - Tissue Engineering (3.0 cr)
- BMEN 5351 - Cell Engineering (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- CHEN 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)
- CHEN 5751 - Biochemical Engineering (3.0 cr)
- MATH 4428 - Mathematical Modeling (4.0 cr)
- MICB 4131 - Immunology (3.0 cr)
- MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
- PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
- CHEM 5245 - Introduction to Drug Design (3.0 cr)
ar MEDC 5245 - Introduction to Drug Design (3.0 cr)

Cell and Tissue Engineering

Take 0 or more course(s) totaling 0 or more credit(s) from the following:

- AEM 3031 - Deformable Body Mechanics (3.0 cr)
- BIOC 5528 - Spectroscopy and Kinetics (4.0 cr)
- BIOL 4003 - Genetics (3.0 cr)
- BIOL 4004 - Cell Biology (3.0 cr)
- BMEN 5001 - Advanced Biomaterials (3.0 cr)
- BMEN 5041 - Tissue Engineering (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 5321 - Microfluidics in Biology and Medicine (3.0 cr)
• BMEN 5351 - Cell Engineering (3.0 cr)
• BMEN 5701 - Cancer Bioengineering (3.0 cr)
• BMEN 5601 - Cardiovascular Devices (1.0 cr)
• CHEN 5751 - Biochemical Engineering (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 4143 - Human Genetics (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)
• KIN 3027 - Human Anatomy for Kinesiology Students (3.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• NEUR 5230 - Cerebrovascular Hemodynamics and Diseases I (4.0 cr)
• NEUR 5240 - Cerebrovascular Hemodynamics and Diseases II (4.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
  or PHSL 5444 - Muscle (3.0 cr)

• Medical Device Design

Students in the Medical Devices EA are expected to include the following courses in their Engineering and Science Electives:

At least 3 credits from "AP"
At least 9 credits from "BME"
At least 3 credits from "D"
No more than 1 course from "IE"
Take 0 or more course(s) totaling 0 or more credit(s) from the following:

AP
Take 0 or more course(s) totaling 0 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 5150 - Human Gross Anatomy (5.0 cr)
  • CPMS 5101 - Introduction to Clinical Physiology and Movement Science (3.0 cr)
  • NSC 5540 - Survey of Biomedical Neuroscience (2.0 cr)
  • PHSL 4021 - Advanced Physiology and Bioengineering: Bionic Human (3.0 cr)
  • PHSL 5020 - Advanced Cardiac Physiology and Anatomy (2.0 - 3.0 cr)
  • PHSL 5525 - Anatomy and Physiology of the Pelvis and Urinary System (1.0 - 2.0 cr)
  • BIOC 5444 - Muscle (3.0 cr)
  or PHSL 5444 - Muscle (3.0 cr)

BME
Take 0 or more course(s) totaling 0 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)
  • RSC 5200 - Introduction to Transcranial Magnetic Stimulation (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)

D
Take 0 or more course(s) totaling 0 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)
  • KIN 3505 - Intro to Human-Centered Design (3.0 cr)
  • ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)

E
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
  • AEM 3031 - Deformable Body Mechanics (3.0 cr)
  • EE 2361 - Introduction to Microcontrollers (4.0 cr)
• EE 3115 - Analog Electronics (3.0 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 5226 - Robotics (4.0 cr)

• IE
    Take 0 or more course(s) totaling 0 or more credit(s) from the following:
    • IE 5541 - Project Management (4.0 cr)
    • IE 5522 - Quality Engineering and Reliability (4.0 cr)
    • KIN 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
    • STAT 5303 - Designing Experiments (4.0 cr)

• Biomedical Transport Processes
    Take 0 or more course(s) totaling 0 or more credit(s) from the following:
    • AEM 3031 - Deformable Body Mechanics (3.0 cr)
    • AEM 5253 - Computational Fluid Mechanics (3.0 cr)
    • BBE 4013 - Transport in Biological Processes II (3.0 cr)
    • BBE 4713 - Biological Process Engineering (3.0 cr)
    • BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
    • BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
    • BMEN 4015 - CAE of Biomechanical/transport Devices (1.0 cr)
    • BMEN 5041 - Tissue Engineering (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 5701 - Cancer Bioengineering (3.0 cr)
    • CEGE 5543 - Introductory Environmental Fluid Mechanics (4.0 cr)
    • CHEN 4701 - Advanced Undergraduate Applied Math I: Linear Analysis (3.0 cr)
    • CHEN 4702 - Advanced Undergraduate Rheology (2.0 cr)
    • CHEN 4704 - Advanced Undergraduate Physical Rate Processes I: Transport (3.0 cr)
    • CHEN 5531 - Electrochemical Engineering and Renewable Energy (3.0 cr)
    • CHEN 5751 - Biochemical Engineering (3.0 cr)
    • CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
    • IE 5522 - Quality Engineering and Reliability (4.0 cr)
    • 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)
    • ME 3333 - Heat Transfer (3.0 cr)
    • ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
    • ME 5341 - Case Studies in Thermal Engineering and Design (4.0 cr)
    • ME 5344 - Thermodynamics of Fluid Flow With Applications (4.0 cr)
    • STAT 5303 - Designing Experiments (4.0 cr)

• Bioelectricity/Bioinstrumentation
    Take 0 or more course(s) totaling 0 or more credit(s) from the following:
    • BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
    • BMEN 4011 - CAD/CAE of Bioelectrical Devices (1.0 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 5411 - Neural Engineering (3.0 cr)
    • EE 3101 - Circuits and Electronics Laboratory I (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 4111 - Advanced Analog Electronics Design (4.0 cr)
    • EE 4541 - Digital Signal Processing (3.0 cr)
    • EE 4607 - Wireless Hardware System Design (3.0 cr)
• EE 4701 - Electric Drives (3.0 cr)
• PHYS 2601 - Quantum Physics (4.0 cr)
• PHYS 4002 - Electricity and Magnetism (4.0 cr)
• PHYS 5510 - Advanced Cardiac Physiology and Anatomy (2.0 - 3.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
or PHSL 5444 - Muscle (3.0 cr)
• EE 4231 - Linear Control Systems: Designed by Input/Output Methods (3.0 cr)
• EE 4235 - Linear Control Systems Laboratory (1.0 cr)
• EE 4233 - State Space Control System Design (3.0 cr)
• EE 4237 - State Space Control Laboratory (1.0 cr)
• EE 4501 - Communications Systems (3.0 cr)
• EE 4505 - Communications Systems Laboratory (1.0 cr)

**Neural Engineering**

Please note that the below courses are listed in order of importance.

Take 0 or more course(s) totaling 0 or more credit(s) from the following:
• BMEN 5411 - Neural Engineering (3.0 cr)
• BMEN 5412 - Neuromodulation (3.0 cr)
• BMEN 5413 - Neural Decoding and Interfacing (3.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• BMEN 5101 - Advanced Bioelectricity and Instrumentation (3.0 cr)
• BMEN 5351 - Cell Engineering (3.0 cr)
• BMEN 5401 - Advanced Biomedical Imaging (3.0 cr)
• BMEN 5421 - Introduction to Biomedical Optics (3.0 cr)
• CPMS 5101 - Introduction to Clinical Physiology and Movement Science (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)
• NSCI 1001 - Fundamental Neuroscience: Understanding Ourselves [TS] (3.0 cr)
• NSCI 3101 - Introduction to Neurobiology I: Molecular, Cellular, and Systems (3.0 cr)
• NSCI 3102W - Introduction to Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
• PHSL 5201 - Computational Neuroscience I: Membranes and Channels (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)

**Biomechanics**

Mechanics of Tissues and Biomaterials

Take 0 or more course(s) totaling 0 or more credit(s) from the following:
• AEM 3031 - Deformable Body Mechanics (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 5501 - Continuum Mechanics (3.0 cr)
• AEM 5503 - Theory of Elasticity (3.0 cr)
• BMEN 3601 - Biomedical Engineering Careers and Practice in the Med Tech Industry (1.0 cr)
• BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
• BMEN 4015 - CAE of Biomechanical/transport Devices (1.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5041 - Tissue Engineering (3.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
• BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATS 3001 - Thermodynamics of Materials (3.0 cr)
• ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• ME 5241 - Computer-Aided Engineering (4.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
or PHSL 5444 - Muscle (3.0 cr)

or Kinematics and Biomechanical Design

Take 0 or more course(s) totaling 0 or more credit(s) from the following:
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• AEM 4501 - Aerospace Structures (3.0 cr)
• AEM 4502 - Computational Structural Analysis (3.0 cr)
• BMEN 4013 - CAD of Biomechanical/transport Devices (1.0 cr)
• BMEN 4015 - CAE of Biomechanical/transport Devices (1.0 cr)
• BMEN 5201 - Advanced Biomechanics (3.0 cr)
• BMEN 5311 - Advanced Biomedical Transport Processes (3.0 cr)
• BMEN 5151 - Introduction to BioMEMS and Medical Microdevices (2.0 cr)
• IE 5511 - Human Factors and Work Analysis (4.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• ME 3221 - Fundamentals of Design & Manufacturing (4.0 cr)
• ME 3222 - Mechanics & Machine Design (4.0 cr)
• ME 4031W - Basic Mechanical Measurements Laboratory [WI] (4.0 cr)
• ME 4231 - Motion Control Laboratory (4.0 cr)
• ME 5221 - Computer-Assisted Product Realization (4.0 cr)
• ME 5268 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
• ME 5241 - Computer-Aided Engineering (4.0 cr)
• ME 5281 - Analog and Digital Control (4.0 cr)
• RSC 5135 - Advanced Biomechanics I: Kinematics (3.0 cr)
• RSC 5235 - Advanced Biomechanics II: Kinetics (3.0 cr)

**Biomaterials**
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
• AEM 3031 - Deformable Body Mechanics (3.0 cr)
• AEM 4511 - Mechanics of Composite Materials (3.0 cr)
• AEM 4581 - Mechanics of Solids (3.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• BMEN 5041 - Tissue Engineering (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 5701 - Cancer Bioengineering (3.0 cr)
• GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
• MATS 3001 - Thermodynamics of Materials (3.0 cr)
• MATS 3012 - Metals and Alloys (3.0 cr)
• MATS 3801 - Structural Characterization Lab (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 4511W [Inactive] (4.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
• or PHSL 5444 - Muscle (3.0 cr)
• CHEN 4214 - Polymers (3.0 cr)
• or MATS 4214 - Polymers (3.0 cr)

**Multivariable Calculus**
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (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)

**Linear Algebra and Differential Equations**
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
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 2018
- 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.

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

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)
  - 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**
  - Either linear algebra & differential equations or 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 2573H - Honors Calculus III (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 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)
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.

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 & 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)

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)
• CEGE 3402W - Civil Engineering Materials [WI] (3.0 cr)
• ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
• ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)
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 1002 - Biorenewable Resources [TS] (3.0 cr)
- 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 (1.0 cr)
- BBE 4403 - Bio-based Products Engineering Lab I (1.0 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)
  or CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products (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 4401 - Independent 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 6 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)
  or CHEN 4223W - Polymer Laboratory [WI] (2.0 cr)
  or MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
- CHEM 4214 - Polymers (3.0 cr)
  or CHEN 4214 - Polymers (3.0 cr)
  or MATS 4214 - Polymers (3.0 cr)

Food Engineering

**Emphasis Courses**
- BBE 4402 - Bio-based Products Engineering Lab II (1.0 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 3 or more course(s) from the following:
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<th>Credits</th>
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<tr>
<td>BBE 4404</td>
<td>Biopolymers and Biocomposites Engineering</td>
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<tr>
<td>BBE 4533</td>
<td>Sustainable Waste Management Engineering</td>
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<td>Renewable Energy Technologies [TS]</td>
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<td>CEGE 4502</td>
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<td>IE 5513</td>
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<tr>
<td>IE 5541</td>
<td>Project Management</td>
<td>4.0 cr</td>
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</table>

**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 3 or more course(s) totaling 9 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 4401 - Bioproducts Separation and Purification Processes (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 [CIIV] (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)

**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 3402W - Civil Engineering Materials [WI] (3.0 cr)
- CEGE 4351 - Groundwater Mechanics (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)
- IE 5513 - Engineering Safety (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:

- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- EEB 3807 - Ecology (4.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
- EEB 5601 - Limnology (3.0 cr)

Take 0 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)

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• CEGE 3111 - CADD for Civil Engineers (2.0 cr)
• ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
• ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
• ESPM 3703 - Agroforestry in Watershed Management (3.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
• SOIL 4111 - Introduction to Precision Agriculture (3.0 cr)
• STAT 5021 - Statistical Analysis (4.0 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 2018
• Required credits to graduate with this degree: 122
• Required credits within the major: 106 to 107
• 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.

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

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)

Freshman Writing
WRIT 1301 - University Writing (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.

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 4502 - Introduction to Quantum Mechanics and Spectroscopy (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
Students majoring in chemical engineering are required to take CHEM 2121. Students may take CHEM 2101/2111 with prior departmental approval.

- CHEM 2121 - Process Analytical Chemistry (3.0 cr)
  - or CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
  - CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 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] (3.0 cr)
- CHEN 4501W - Chemical Engineering Design I [WI] (3.0 cr)
- CHEN 4502W - Chemical Engineering Design II [WI] (2.0 cr)
- CHEN 4601 - Process Control (3.0 cr)
- MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)

Technical Electives
- CHEN 4214, Polymers, is highly recommended.

All technical electives must be taken A-F. At least two of the courses must be science or engineering courses at the 4XXX level or above.

Students may have one course from the science, technology and society area count towards the 9 credits of technical electives.

Take 9 or more credit(s) from the following:
- • BBE 4301 - Applied Surface and Colloid Science (3.0 cr)
- • 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)
- • BIOC 3021 - Biochemistry (3.0 cr)
- • BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)

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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 5527</td>
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<td>BMEN 5041</td>
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<td>Linear Control Systems: Designed by Input/Output Methods (3.0 cr)</td>
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<td>EE 5173</td>
<td>Basic Microelectronics Laboratory (1.0 cr)</td>
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<td>EE 5393</td>
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<td>EE 5655</td>
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<td>Statistics, Quality, and Reliability (4.0 cr)</td>
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<tr>
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<td>Financial Decision Making (4.0 cr)</td>
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• IE 5513 - Engineering Safety (4.0 cr)
• IE 5522 - Quality Engineering and Reliability (4.0 cr)
• IE 5541 - Project Management (4.0 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 4242 - Applied Linear 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 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
• MATH 5486 - Introduction To Numerical Methods II (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations 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)
• MATS 3013 - Electrical and Magnetic Properties of Materials (3.0 cr)
• MATS 4212 - Ceramics (3.0 cr)
• MATS 4214 - Polymers (3.0 cr)
• MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
• MATS 4301W - Materials Processing [WI] (4.0 cr)
• MATS 5531 - Electrochemical Engineering (3.0 cr)
• ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)
• ME 5113 - Aerosol/Particle Engineering (4.0 cr)
• ME 5223 - Materials in Design (4.0 cr)
• ME 5446 - Introduction to Combustion (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• MICB 4131 - Immunology (3.0 cr)
• MOT 5001 - Technological Business Fundamentals (2.0 cr)
• MOT 5002 - Creating Technological Innovation (2.0 cr)
• MOT 5003 - Technological Business Planning Workshop (1.0 cr)
• MSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
• PDES 3711 - Toy Product Design (4.0 cr)
• PDES 5711 - Toy Product Design (4.0 cr)
• PHAR 6164 - Biopharmaceutics (3.0 cr)
• PHAR 6224 - Pharmacogenomics: Genetic Basis for Variability in Drug Response (2.0 cr)
• PHSL 3061 - Principles of Physiology (4.0 cr)
• PHSL 5061 - Principles of Physiology for Biomedical Engineering (4.0 cr)
• PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
• PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• PUBH 6161 - Regulatory Toxicology (2.0 cr)

**Science, Technology and Society Technical Electives**

Students may only take one course from this area. The other remaining technical electives must be science/engineering and 4XXX level or higher.

Take at most 4 credit(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 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 3480 - Topics in Sustainability (1.0 - 4.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• WRIT 4431W - Science, Technology, and the Law [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:

• 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] (3.0 cr)
• CHEN 4501W - Chemical Engineering Design I [WI] (3.0 cr)
• CHEN 4502W - Chemical Engineering Design II [WI] (2.0 cr)
• MATS 4223W - Polymer Laboratory [WI] (2.0 cr)
• MATS 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 70 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.

Freshman and transfer 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 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 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)
- 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)
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.

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)
- or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- or PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
- or 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)
- CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
- CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 cr)

Organic Chemistry II

- CHEM 2302 - Organic Chemistry II (3.0 cr)
- or CHEM 2332H - Honors Elementary Organic Chemistry II (3.0 cr)

Lab can be taken concurrent with or after taking CHEM 2302

- CHEM 2311 - Organic Lab (4.0 cr)
- or CHEM 2312H - Honors Organic Lab (5.0 cr)

Electives

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 4223W - Polymer Laboratory [WI] (2.0 cr)
- CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)

Advanced Chemistry Lecture
Select one course for a minimum of 3 credits from any non-required upper division course in chemistry.

- CHEM 4xxx
- or CHEM 5xxx
- or CHEM 4001 - Chemistry of Biomass and Biomass Conversion to Fuels and Products (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 4214 - Polymers (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)

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 (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)
• PUBH 6191 - Air Pollution (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)
• BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
• CEGE 3101 - Computer Applications I (3.0 cr)
• CEGE 5541 - Environmental Water Chemistry (3.0 cr)
• EE 2001 - Introduction to Circuits and Electronics (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)
  or ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (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 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.

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)
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)

or PHYS 1501V - Honors Introduction to Mechanics [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 - Honors Introduction to Electricity and Magnetism [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.

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 3402W - Civil Engineering Materials [WI] (3.0 cr)
CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
CEGE 3502 - Fluid Mechanics (4.0 cr)
CEGE 4101 - Project Management and Engineering Economics (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)
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 4194H - Senior Honors Thesis (2.0 cr)
- CEGE 4201 - Principles of Highway Design (3.0 cr)
- CEGE 4211 - Traffic Engineering (3.0 cr)
- CEGE 4251 - Pavement Analysis, Design, and Rehabilitation (4.0 cr)
- CEGE 4253 - Pavement Engineering and Management (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 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 4xxx
• CEGE 5094 - Civil Engineering Research (1.0 - 4.0 cr)
• CEGE 5180 - Special Topics (1.0 - 4.0 cr)
• CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• CEGE 5253 - Asphalt and Portland Cement Concrete Materials (4.0 cr)
• CEGE 5351 - Advanced Engineering Mathematics (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)
• 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 4203 - Computer Architecture (4.0 cr)
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• CSCI 4xxx
• CSCI 5xxx
• EE 2001 - Introduction to Circuits and Electronics (3.0 cr)
• 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 3425 - Atmospheric Pollution: From Smog to Climate Change (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 5205 - Fluid Mechanics in Earth and Environmental Sciences (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)
• FNRIM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 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 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 2001** - Introduction to the Science of Engineering Materials (3.0 cr)
• **MATS 4xxx**
• **MATS 5xxx**
• **ME 3331** - 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)

**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 3402W** - Civil Engineering Materials [WI] (3.0 cr)
• **CEGE 4102W** - Capstone Design for Civil Engineering [WI] (4.0 cr)
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 2018
- 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.

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 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
Alternative paths to learning the basics of programming and computer systems may be available in replacement of CSCI 1913 (and the non required for admission course EE 1301). Consult your academic advisor as to other situations as needed.
- CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
- EE 2001 - Introduction to Circuits and Electronics (3.0 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)

ECE Courses
- EE 1301 - Introduction to Computing Systems (4.0 cr)
  or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
- EE 2002 - Introductory Circuits and Electronics Laboratory (1.0 cr)
- EE 2011 - Linear Systems, Circuits, and Electronics (3.0 cr)
- EE 2361 - Introduction to Microcontrollers (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:

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)
- 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)

• 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 - Physics of Computing: Basics (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 - Physics of Computing: Basics (3.0 cr)
• EE 5391 - 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 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)

VLSI and CAD
Take 0 or more course(s) from the following:
• EE 4301 - Digital Design With Programable 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 5461 - Functional Genomics, Systems Biology, and Bioinformatics (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 5607 - 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 [ENV] (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)
• CSCI 4xxx
• CSCI 5xxx
• 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 - Theory of Statistics II (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 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 Industrial Relations (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)
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 2018
• 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.

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
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)

Computer Science Introductory Core
CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)

Options
Option 1
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - 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.
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)
or PHYS 1501V - Honors Introduction to Mechanics [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)
• PHYS 1502V - Honors Introduction to Electricity and Magnetism [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
STAT 3021 - Introduction to Probability and Statistics (3.0 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 4041 - Algorithms and Data Structures (4.0 cr)
CSCI 4061 - Introduction to Operating Systems (4.0 cr)
CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)
or MATH 4242 - Applied Linear Algebra (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 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)

Upper Division Math Oriented Requirement
Students must take an upper division math oriented course. The course selected will count towards the 23 credit minimum of track requirements.
Upper Division Math Oriented Requirement options. The following MATH courses aren't accepted: MATH 4005, 4065, 4067W, 4113, 4116, 4118, 5067, 5068, 5075, and 5076.
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 5403 - Computational Complexity (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 4xxx
• MATH 5xxx

Approved Computer Science Track Electives
The following list can be used as track electives for all of the computer science tracks including the custom option. All 4000-5000 level CSCI courses are accepted as track electives except for the core requirements (4041, 4041H, and 4061) and CSCI 5996.

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Information current as of August 24, 2018
Take 1 or more course(s) from the following:

- AEM 4601 - Instrumentation Laboratory (3.0 cr)
- AST 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- BIOL 5272 - Applied Bioinformatics (4.0 cr)
- CHEM 4021 - Computational Chemistry (3.0 cr)
- CSCI 4xxx
- CSCI 5xxx
- 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 5371 - Computer Systems Performance Measurement and Evaluation (3.0 cr)
- EE 5393 - Circuits, Computation, and Biology (3.0 cr)
- EE 5505 - Wireless Communication (3.0 cr)
- FNRM 5131 - Geographical Information Systems (GIS) for Natural Resources (4.0 cr)
- FNRM 5262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
- FNRM 5412 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
- HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
- IDSC 4204W - Strategic Information Technology Management [WI] (4.0 cr)
- IDSC 4431 - Advanced Database Design (2.0 cr)
- IDSC 4441 - Electronic Commerce (2.0 cr)
- IE 4011 - Stochastic Models (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - Dev Ops I: Network Programming (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)
- INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
- KIN 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
- LING 5801 - Introduction to Computational Linguistics (3.0 cr)
- MATH 4xxx
- MATH 5xxx
- ME 5228 - Introduction to Finite Element Modeling, Analysis, and Design (4.0 cr)
- ME 5286 - Robotics (4.0 cr)
- MICE 5035 - Personal Microbiome Analysis (3.0 cr)
- PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
- PHYS 5018H - Mathematical Models of Human Behavior (3.0 cr)
- PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
- STAT 4xxx
- STAT 5xxx

• GDES and PDES course options
  Take 0 - 2 course(s) from the following:
  • GDES 4371 - Data Visualization Studio (3.0 cr)
  • GDES 5341 - Interactive 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 Track
A CSci track and the ud math oriented requirement must total 23 credits. 11 of the 23 credits must be from CSci courses.

Architecture and Hardware Systems
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4203 or EE4363 and CSCI 5204. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

- CSCI 5204 - Advanced Computer Architecture (3.0 cr)
- CSCI 4203 - Computer Architecture (4.0 cr)

or
- EE 4363 - Computer Architecture and Machine Organization (4.0 cr)

Architecture and Hardware Systems Sublist
Take 2 or more course(s) from the following:
  • CSCI 4211 - Introduction to Computer Networks (3.0 cr)
  • CSCI 5103 - Operating Systems (3.0 cr)
  • CSCI 5161 - Introduction to Compilers (3.0 cr)
  • CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• EE 4341 - Embedded System Design (4.0 cr)

-OR-

Artificial Intelligence/Robotics
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4511W and CSCI 5512. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.
CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
CSCI 5512 - Artificial Intelligence II (3.0 cr)

Artificial Intelligence/Robotics Sublist
Take 2 or more course(s) from the following:
• 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)

-OR-

Big Data
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4707 or CSCI 5105 and CSCI 5521 or CSCI 5523. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

Requirement 1
CSCI 4707 - Practice of Database Systems (3.0 cr)
or CSCI 5105 - Introduction to Distributed Systems (3.0 cr)

Requirement 2
CSCI 5521 - Introduction to Machine Learning (3.0 cr)
or CSCI 5523 - Introduction to Data Mining (3.0 cr)

Big Data Sublist
Take 2 or more course(s) from the following:
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
• CSCI 5481 - Computational Techniques for Genomics (3.0 cr)
• CSCI 5512 - Artificial Intelligence II (3.0 cr)
• CSCI 5609 - Visualization (3.0 cr)
• INET 4061 - Data Science I: Fundamentals (3.0 cr)
• INET 4710 - Data Science II: Big Data Analytics (4.0 cr)
• MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

-OR-

Bioinformatics and Computational Biology
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 5461 and CSCI 5481. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.
CSCI 5461 - Functional Genomics, Systems Biology, and Bioinformatics (3.0 cr)
CSCI 5481 - Computational Techniques for Genomics (3.0 cr)

Bioinformatics and Computational Biology Sublist
Take 2 or more course(s) from the following:
• CSCI 4707 - Practice of Database Systems (3.0 cr)
• CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
• CSCI 5521 - Introduction to Machine Learning (3.0 cr)
• CSCI 5523 - Introduction to Data Mining (3.0 cr)

-OR-

Computational Science
This track is 23 credits minimum, split into two parts. Take four classes from the course list below, including the two required courses: CSCI 5302 and CSCI 5304. The second part to complete a track is enough track electives to reach the 23 credit minimum.

This track's required courses meet the upper division math oriented.
CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)

Computational Science Sublist
Take 2 or more course(s) from the following:
- 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 5523 - Introduction to Data Mining (3.0 cr)
- CSCI 5609 - Visualization (3.0 cr)
- MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
- MATH 5467 - Introduction to the Mathematics of Image and Data 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 5711 - Linear Programming and Combinatorial Optimization (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)

-OR-

Databases
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4707 and CSCI 5708. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

CSCI 4707 - Practice of Database Systems (3.0 cr)
CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)

Databases Sublist
Take 2 or more course(s) from the following:
- 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 5103 - Operating Systems (3.0 cr)
- CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
- CSCI 5523 - Introduction to Data Mining (3.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)

-OR-

Geographical Information Systems
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4707 and CSCI 5708. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

CSCI 4707 - Practice of Database Systems (3.0 cr)
CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)

Geographical Information Systems Sublist
Take 2 or more course(s) from the following:
- CSCI 5715 - From GPS and Virtual Globes to Spatial Computing (3.0 cr)
- FNRM 5131 - Geographical Information Systems (GIS) for Natural Resources (4.0 cr)
- FNRM 5262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
- FNRM 5412 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
- CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
  or CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)

-OR-

Graphics and Visualization
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4611 or 5607 and CSCI 5608 or 569 or 5611 or 5619. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

Requirement 1
CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
  or CSCI 5607 - Fundamentals of Computer Graphics I (3.0 cr)

Requirement 2
CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
  or CSCI 5609 - Visualization (3.0 cr)
  or CSCI 5611 - Animation & Planning in Games (3.0 cr)
  or CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)

Graphics and Visualization Sublist
Take 2 or more course(s) from the following:

- CSCI 4611 - Programming Interactive Computer Graphics and Games (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 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
- CSCI 5125 - Collaborative and Social Computing (3.0 cr)
- CSCI 5302 - Analysis of Numerical Algorithms (3.0 cr)
- CSCI 5561 - Computer Vision (3.0 cr)
- CSCI 5523 - Introduction to Data Mining (3.0 cr)
- CSCI 5561 - Computer Vision (3.0 cr)

-OR-

Human Computer Interaction

A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 5115 and CSCI 5125. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum:

- CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
- CSCI 5125 - Collaborative and Social Computing (3.0 cr)

Human Computer Interaction Sublist

- CSCI 5117 - Developing the Interactive Web (3.0 cr)
- CSCI 5123 - Recommender Systems (3.0 cr)
- CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
- CSCI 5609 - Visualization (3.0 cr)
- KIN 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)

-OR-

Networks

A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4211 and CSCI 5221. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

- CSCI 4211 - Introduction to Computer Networks (3.0 cr)
- CSCI 5221 - Foundations of Advanced Networking (3.0 cr)

Networks Sublist

- CSCI 5103 - Operating Systems (3.0 cr)
- CSCI 5105 - Introduction to Distributed Systems (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)
- EE 5505 - Wireless Communication (3.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - Dev Ops I: Network Programming (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)

-OR-

Security

A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4211 and CSCI 5271. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.

- CSCI 4211 - Introduction to Computer Networks (3.0 cr)
- CSCI 5271 - Introduction to Computer Security (3.0 cr)

Security Sublist

- CSCI 5103 - Operating Systems (3.0 cr)
- CSCI 5471 - Modern Cryptography (3.0 cr)
- CSCI 5801 - Software Engineering I (3.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)

-OR-
Software and Data Systems Development
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4707 and CSCI 5801. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.
CSCI 4707 - Practice of Database Systems (3.0 cr)
CSCI 5801 - Software Engineering I (3.0 cr)

Software and Data Systems Development Sublist
Take two or more course(s) from the following:
- CSCI 4131 - Internet Programming (3.0 cr)
- CSCI 4211 - Introduction to Computer Networks (3.0 cr)
- CSCI 5103 - Operating Systems (3.0 cr)
- CSCI 5106 - Programming Languages (3.0 cr)
- CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
- CSCI 5161 - Introduction to Compilers (3.0 cr)
- CSCI 5271 - Introduction to Computer Security (3.0 cr)
- CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
- CSCI 5802 - Software Engineering II (3.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)

-OR-

Software Engineering/Programming Languages
This track is 23 credits minimum, split into two parts. Take four classes from the course list below, including the three required courses: CSCI 4011, CSCI 5106, and CSCI 5801. The second part to complete a track is enough track electives to reach the 23 credit minimum.

This track's required courses meet the upper division math oriented.
CSCI 5106 - Programming Languages (3.0 cr)
CSCI 5801 - Software Engineering I (3.0 cr)
CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)

SE/PL Sublist
Take one or more course(s) from the following:
- CSCI 5161 - Introduction to Compilers (3.0 cr)
- CSCI 5802 - Software Engineering II (3.0 cr)
- MATH 5165 - Mathematical Logic I (4.0 cr)

-OR-

Systems
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 4211 and CSCI 5103. The second part is one math oriented requirement. The final part to complete a track is enough track electives to reach the 23 credit minimum.
CSCI 4211 - Introduction to Computer Networks (3.0 cr)
CSCI 5103 - Operating Systems (3.0 cr)

Systems Sublist
Take two or more course(s) from the following:
- CSCI 4131 - Internet Programming (3.0 cr)
- CSCI 5105 - Introduction to Distributed Systems (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 5551 - Introduction to Intelligent Robotic Systems (3.0 cr)

-OR-

Theory
This track is 23 credits minimum, split into two parts. Take four classes from the course list below, including the two required courses: CSCI 4011 and CSCI 5421. The second part to complete a track is enough track electives to reach the 23 credit minimum.

This track's required courses meet the upper division math oriented.
CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)

Theory Sublist
Take two or more course(s) from the following:
- CSCI 5403 - Computational Complexity (3.0 cr)
• CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (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 5165 - Mathematical Logic I (4.0 cr)
• MATH 5166 - Mathematical Logic II (4.0 cr)
• MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)

-OR-

Custom Track
In rare instances, students may create their own track. Such tracks must be discussed with a CSci advisor. Custom tracks must be highly coherent, sufficiently advanced, in accordance with a computer science degree, and aligned with the student's goals. Students can choose their courses from the pre-approved track electives list. A custom track must still contain 23 credits minimum including an upper division math oriented requirement.
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 2018
- 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 5 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 1061 - Chemical Principles I [PHYS] (3.0 cr)
Chem 1065 - 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] (1.0 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.

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 3006 [inactive] [ENV] (3.0 cr)
• GCC 5008 - Policy and Science of Global Environmental Change [ENV] (3.0 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 course plans that satisfy this requirement in specific areas of Earth Sciences.

GCC 3004 (or GCC 3006 or GCC 5008) can be used as either major or technical elective (not both).

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)
- ESCI 5504W - Neotectonics [WI] (3.0 cr)
- ESCI 5601W - Advanced Sedimentology [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)
    - ESI 5205 - Fluid Mechanics in Earth and Environmental Sciences (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 ESI 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 2018
• 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; phytoremediation 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 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 3101 [Inactive] (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 ESCI 5205 - Fluid Mechanics in Earth and Environmental Sciences (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 2018
- Required credits to graduate with this degree: 124
- Required credits within the major: 104
- 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.

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 2001 - Introduction to Circuits and Electronics (3.0 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 2002 - Introductory Circuits and Electronics Laboratory (1.0 cr)
EE 2011 - Linear Systems, Circuits, and Electronics (3.0 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)
• 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 5603 - 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 5551 - 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 - Physics of Computing: Basics (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)

**VLSI 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 5601 - Introduction to RF/Microwave Engineering (3.0 cr)
•EE 5602 - RF/Microwave Circuit Design (3.0 cr)
•EE 5616 - Antenna Theory and 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 5640 - Introduction to Nano-Optics (3.0 cr)
•EE 5649 - Infrared Devices and Technology (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)
• 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 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 - Theory of Statistics II (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)
• HIRIR 3021 - Human Resource Management and Industrial Relations (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 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 4982W - 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)
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 2018
- 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.

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 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)
or PHYS 1501V - Honors Introduction to Mechanics [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 - Honors Introduction to Electricity and Magnetism [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.

CEGE Core
CEGE 3101 - Computer Applications I (3.0 cr)
cee 3102 - Uncertainty and Decision Analysis (3.0 cr)
cee 3103 - Engineering Ethics and Professional Practice (1.0 cr)
cee 3301 - Soil Mechanics I (3.0 cr)
cee 3402W - Civil Engineering Materials [WI] (3.0 cr)
cee 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
cee 3502 - Fluid Mechanics (4.0 cr)
cee 3541 - Environmental Engineering Laboratory (3.0 cr)
cee 4101 - Project Management and Engineering Economics (3.0 cr)
cee 4102W - Capstone Design for Civil Engineering [WI] (4.0 cr)
cee 4501 - Hydrologic Design (4.0 cr)
cee 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 Hazards and Disasters [TS] (3.0 cr)
•ESCI 1101 - Introduction to Geology [ENV] (3.0 cr)
•ESCI 1105 - Geology and Cinema [ENV] (3.0 cr)
•ESCI 1106 - Oceanography [ENV] (3.0 cr)
•ESCI 1902 - Geology of Minnesota [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 - Planets of the Solar System (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 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• ESCI 3911 - Introductory Field Geology (4.0 cr)
• ESCI 4010 - Undergraduate Seminar: Current Topics in Earth 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 - Aquiferous 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 4503 - Neotectonics (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 5205 - Fluid Mechanics in Earth and Environmental Sciences (3.0 cr)
• ESCI 5302 - Isotope Geology (3.0 cr)
• ESCI 5351 - Geochemical Modeling of Aquiferous 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 5502 - Advanced Structural Geology (3.0 cr)
• ESCI 5503 - Advanced Petrology (3.0 cr)
• ESCI 5504W - Neotectonics [WI] (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 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)
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)

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-requirement(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)
- **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 5511** - Urban Hydrology and Water Quality (4.0 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 4561** - Solids and Hazardous Wastes (3.0 cr)
  *or BBE 4533* - Sustainable Waste Management Engineering (3.0 cr)

**Environmental Sciences and Policy (ESP) Electives**

Students must take a minimum of 3 credits from this category.

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

- **EEB 5601** - Limnology (3.0 cr)
- **ESCI 3303W** - Geochronological Principles [WI] (4.0 cr)
- **ESCI 3402** - Science and Politics of Global Warming [ENV] (3.0 cr)
- **ESCI 3425** - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
- **ESCI 4702** - General Hydrogeology (4.0 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)
  *or GCC 5005* - Global Venture Design: What Impact Will You Make? [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**
- **CHEN 5xxx**
- **CMPE 4xxx**
- **CMPE 5xxx**
- **CSCI 4xxx**
- **CSCI 5xxx**
- **EE 4xxx**
- **EE 5xxx**
- **ESCI 4xxx**
- **ESCI 5xxx**
- **IE 4xxx**
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 3402W - Civil Engineering Materials [WI] (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)
Twin Cities Campus
Geoengineering B.GeoE.
CSENG Civil, Envrn & Geo-Eng (CEGE)
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 125
- Required credits within the major: 106
- 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.

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

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

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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 - Honors Introduction to Mechanics [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 - Honors Introduction to Electricity and Magnetism [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.

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 4101 - Project Management and Engineering Economics (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 EE 2001 - Introduction to Circuits and Electronics (3.0 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 Geoengineering Technical Electives. Including these categories, the program requires a minimum of 15 credits of electives. Take 15 or more credit(s) including exactly 4 sub-requirement(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

**Geoengineering Technical Electives**
Students must take a minimum of 1 course from the following:
Take exactly 1 course(s) totaling 3 - 4 credit(s) including exactly 0 sub-requirements(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 15 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 3202 - Surveying & Mapping (2.0 cr)
• CEGE 3402W - Civil Engineering Materials [WI] (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 4194H - Senior Honors Thesis (2.0 cr)
• CEGE 4201 - Principles of Highway Design (3.0 cr)
• CEGE 4211 - Traffic Engineering (3.0 cr)
• CEGE 4251 - Pavement Analysis, Design, and Rehabilitation (4.0 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 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 4xxx
• CEGE 5094 - Civil Engineering Research (1.0 - 4.0 cr)
• CEGE 5180 - Special Topics (1.0 - 4.0 cr)
• CEGE 5211 - Traffic Engineering (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 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 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

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• STAT 5xxx
• WRS 5101 - Water Policy (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 3402W - Civil Engineering Materials [WI] (3.0 cr)
• ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
• CEGE 4104W - Capstone Design for Geoengineering [WI] (4.0 cr)
Twin Cities Campus
Industrial and Systems Engineering B.I.Sy.E.
Industrial and Systems Engineering
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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, marketing, and quality and reliability) to support the modeling, design, and optimization of systems across a wide range of applications and domains.

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.

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)
  MKTG 3001 - Principles of Marketing (3.0 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)

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)

Technical Electives
  Complete 15 credits of technical electives to be approved by an ISyE faculty advisor.

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)
Twin Cities Campus
Information Technology Minor
Computer Science and Engineering
College of Science and Engineering

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2018
- 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
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 5341 - Interactive Design (3.0 cr)
- GDES 5342 - Advanced Web Design (3.0 cr)
- GDES 5372 - Data Visualization for Interactive Platforms (3.0 cr)
- GDES 5363 - 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 - Internet and 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 2018
- 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.

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 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
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 freshmen in the College of Science and Engineering must complete CSE 1001: First-Year Experience.

Chemistry  
Principles of Chemistry 1  
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)  
CHEM 2301 - Organic Chemistry I (3.0 cr)  
or CHEM 2331H - Honors Elementary Organic Chemistry I (3.0 cr)

Major Courses  
AEM 4511 - Mechanics of Composite Materials (3.0 cr)  
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 Material 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)  
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 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 2263 - Multivariable Calculus (4.0 cr)  
or MATH 2573H - Honors Calculus III (4.0 cr)  
or MATH 2573H - Honors Calculus III (4.0 cr)  
or MATS 4214 - Polymers (3.0 cr)  
or CHEM 4214 - Polymers (3.0 cr)  
or CHEM 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:

- BIOC 3021 - Biochemistry (3.0 cr)
- BMEN 5001 - Advanced Biomaterials (3.0 cr)
- CEGE 3402W - Civil Engineering Materials [WI] (3.0 cr)
- CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
- CEGE 3502 - Fluid Mechanics (4.0 cr)
- CEGE 4121 - Computer Applications II (3.0 cr)
- CEGE 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 3166 - 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)
- 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 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 4223W - Polymer Laboratory [WI] (2.0 cr)
- MATS 4594 - Directed Research in Materials Science (1.0 - 3.0 cr)
- MATS 5517 - Electron Microscopy (3.0 cr)
- PDES 3706 - Designing for Manufacture (4.0 cr)
- PDES 5701 - Creativity, Idea Generation, and Innovation (3.0 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)
- STAT 3021 - 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 Methods (3.0 cr)
  or 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:

- 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 2018
- 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 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)
  - 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 - Honors Introduction to Mechanics [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 - Honors Introduction to Electricity and Magnetism [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, 499x 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)

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Information current as of August 24, 2018
• 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 - 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 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (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)

**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 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 4428 - Mathematical Modeling (4.0 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 5067 - Actuarial Mathematics I (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 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 - Theory of Statistics II (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 Elec.

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)
or
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 - Computational Complexity (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 - Statistical Methods for Quality Improvement (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 - Theory of Statistics II (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 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

or 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 - Theory of Statistics II (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)

or 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 5487 - 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 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 - 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 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:
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 - Theory of Statistics II (4.0 cr)
• MATH 5336 - Geometry II (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)

Chemical Engineering
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 - Chemical Engineering Reactor Engineering (4.0 cr)

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 - Computational Complexity (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)

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

STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

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

- 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 - Statistical Methods for Quality Improvement (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 4242 - 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 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, 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)
  - 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 (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)
  - 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)
  - 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 4700 - 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 2018
• 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.

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 - Analog and Digital Control (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 5101 - Advanced Bioelectricity and Instrumentation (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 - Asphalt and Portland Cement Concrete Materials (4.0 cr)
• CEGE 5351 - Advanced Engineering Mathematics (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)
• 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 4450 - Physical Chemistry, Kinetics, and Statistical Mechanics (3.0 cr)
• CHEM 4451W - 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)
• CHEN 4501W - Chemical Engineering Design I [WI] (3.0 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 4708 - Advanced Undergraduate Chemical Rate Processes: Analysis of Chemical Reactors (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 - Algorithms and Data Structures (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 - Computational Complexity (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 5451W - 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 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 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 3151 - 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)  
• EE 4501 - Communications Systems (3.0 cr)  
• EE 4541 - Digital Signal Processing (3.0 cr)
• EE 4607 - Wireless Hardware System Design (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 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)
• 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)
• EE 5340 - Physics of Computing: Basics (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 5381 - Telecommunications Networks (3.0 cr)
• EE 5391 - Computing With Neural Networks (3.0 cr)
• EE 5399 - Circuits, Computation, and Biology (3.0 cr)
• EE 5501 - Digital Communication (3.0 cr)
• EE 5511 - 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 5556 - Image Processing and Applications (3.0 cr)
• EE 5581 - Information Theory and Coding (3.0 cr)
• EE 5583 - Error Control Coding (3.0 cr)
• EE 5585 - Data Compression (3.0 cr)
• EE 5601 - Introduction to RF/Microwave Engineering (3.0 cr)
• EE 5602 - RF/Microwave Circuit Design (3.0 cr)
• EE 5611 - Plasma-Aided Manufacturing (4.0 cr)
• EE 5613 - RF/Microwave Circuit Design Laboratory (2.0 cr)
• EE 5616 - Antenna Theory and Design (3.0 cr)
• EE 5624 - Optical Electronics (4.0 cr)
• EE 5640 - Introduction to Nano-Optics (3.0 cr)
• EE 5649 - Infrared Devices and Technology (3.0 cr)
• EE 5653 - Physical Principles of Magnetic Materials (3.0 cr)
• EE 5655 - Magnetic Recording (3.0 cr)
• EE 5657 - Physical Principles of Thin Film Technology (4.0 cr)
• EE 5670 - Spintronic Devices (3.0 cr)
• EE 5721 - Power Generation Operation and Control (3.0 cr)
• EE 5725 - Power Systems Engineering (3.0 cr)
• EE 5741 - Advanced Power Electronics (3.0 cr)
• EE 5811 - Biological Instrumentation (3.0 cr)
• ESCI 4402 - Biogeochemical Cycles in the Ocean (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 5102 - Climate Change and Human History (3.0 cr)
• ESCI 5203 - Mineral and Rock Physics (3.0 cr)
• ESCI 5204 - Geostatistics and Inverse Theory (3.0 cr)
• ESCI 5205 - Fluid Mechanics in Earth and Environmental Sciences (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 5502 - Advanced Structural Geology (3.0 cr)
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<td>ESCI 5503</td>
<td>Advanced Petrology</td>
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<td>ESCI 5504W</td>
<td>Neotectonics [WI]</td>
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<td>Nature's History: Science, Humans, and the Environmnet</td>
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<td>Ethics in Science and Technology</td>
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<td>MATH 4653</td>
<td>Elementary Probability</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 4707</td>
<td>Introduction to Combinatorics and Graph Theory</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5165</td>
<td>Mathematical Logic I</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5166</td>
<td>Mathematical Logic II</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5248</td>
<td>Cryptology and Number Theory</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5251</td>
<td>Error-Correcting Codes, Finite Fields, Algebraic Curves</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5286H</td>
<td>Honors: Fundamental Structures of Algebra I</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5286H</td>
<td>Honors: Fundamental Structures of Algebra II</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5335</td>
<td>Geometry I</td>
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<tr>
<td>MATH 5336</td>
<td>Geometry II</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5345H</td>
<td>Honors: Introduction to Topology</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5378</td>
<td>Differential Geometry</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5385</td>
<td>Introduction to Computational Algebraic Geometry</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5445</td>
<td>Mathematical Analysis of Biological Networks</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5447</td>
<td>Theoretical Neuroscience</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5467</td>
<td>Introduction to the Mathematics of Image and Data Analysis</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5525</td>
<td>Introduction to Ordinary Differential Equations</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5535</td>
<td>Dynamical Systems and Chaos</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5583</td>
<td>Complex Analysis</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATH 5587</td>
<td>Elementary Partial Differential Equations I</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5588</td>
<td>Elementary Partial Differential Equations II</td>
<td>4.0 cr</td>
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<td>MATH 5615H</td>
<td>Honors: Introduction to Analysis I</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5616H</td>
<td>Honors: Introduction to Analysis II</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5651</td>
<td>Basic Theory of Probability and Statistics</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5652</td>
<td>Introduction to Stochastic Processes</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5654</td>
<td>Prediction and Filtering</td>
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<td>MATH 5705</td>
<td>Enumerative Combinatorics</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5707</td>
<td>Graph Theory and Non-enumerative Combinatorics</td>
<td>4.0 cr</td>
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<tr>
<td>MATH 5711</td>
<td>Linear Programming and Combinatorial Optimization</td>
<td>4.0 cr</td>
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<tr>
<td>MATS 3013</td>
<td>Electrical and Magnetic Properties of Materials</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>MATS 3801</td>
<td>Structural Characterization Lab</td>
<td>4.0 cr</td>
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<tr>
<td>MATS 3851W</td>
<td>Materials Properties Lab [WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATS 4212</td>
<td>Ceramics</td>
<td>3.0 cr</td>
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<tr>
<td>MATS 4221</td>
<td>Materials Performance</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATS 4301W</td>
<td>Materials Processing [WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>MATS 5353</td>
<td>Electron Microprobe Theory and Practice</td>
<td>3.0 cr</td>
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</tbody>
</table>
BMEN 3315 - Biomaterials Lab (1.0 cr)
• CEGE 5551 - Environmental Microbiology (3.0 cr)
CEGE 5552 - Environmental Microbiology Laboratory (1.0 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)
• 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 2018
• 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 - Honors Introduction to Mechanics [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 - Honors Introduction to Electricity and Magnetism [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 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 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or IE 3521 - Statistics, Quality, and Reliability (4.0 cr)

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)
or CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or 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)
or 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)

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.
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. PHYS4911 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 4911 - Introduction to Biopolymer Physics (3.0 cr)
- PHYS 5041 - Mathematical Methods for 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:
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)
- AST 5201 - Methods of Experimental Astrophysics (4.0 cr)
- CSCI 3081W - Program Design and Development [WI] (4.0 cr)
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 [SOC] (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)
• 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)
• ESCI 3006 - Planets of the Solar System (3.0 cr)
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 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)
• MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
• MM 3305 - 3D Printing and Additive Manufacturing (3.0 cr)
• PHYS 4002 - Electricity and Magnetism (4.0 cr)
• PHYS 4101 - Quantum Mechanics (4.0 cr)
• PHYS 4121W - History of 20th-Century Physics [WI] (3.0 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 4621 - Introduction to Plasma Physics (3.0 cr)
• PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
• PHYS 5041 - Mathematical Methods for 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)
• IE 3521 - Statistics, Quality, and Reliability (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 3021 - Introduction to Probability and Statistics (3.0 cr)
• Take at most 8 credit(s) from the following:
  • AST 1001 - Exploring the Universe [PHYS, ENV] (4.0 cr)
  • BIOL 1009 - General Biology [BIOL] (4.0 cr)
  • ESCI 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
  • ESCI 1006 - Oceanography [PHYS, ENV] (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)

**Engineering**
Students who are interested in the practical application of physics to the engineering fields, but who would like a less specialized education than they would find in an engineering department, will find that this sub-plan provides them with a solid education. In addition to the strong physics core curriculum, students can either focus on one area of engineering or explore a broad range of interests across a number of engineering fields. Students who are interested in moving directly into industry, as well as those who want to pursue a graduate degree in either engineering or physics will find this program valuable.

**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.

- 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 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 at most 19 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 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 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 19 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 Computing and Programming Concepts (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
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 2018
- 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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 84
- 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."

With increased automation over the years, the role of accountants has changed dramatically. Formerly regarded as simply number-crunchers, accountants have become 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)
  or APEC 1102H - Honors: 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 3911 - 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
Effective July 1, 2006: Students who wish to earn the Certified Public Accountant (CPA) certification will need to complete 150 credit hours of coursework.

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)

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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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 5201 - Intermediate Management Accounting (2.0 cr)
BLAW 3058 - The Law of Contracts and Agency (4.0 cr)

Electives
Take 4 or more credit(s) from the following:
• 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)
• ACCT 5126 - Internal Auditing (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)
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 2018
• 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

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 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 2018
- Required credits in this minor: 18
- 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 MKTG 3005 - Introduction to Applying Analytical Tools for Solving Business Problems (2.0 cr)

or IDSC 4110 - Data Engineering for Business Analytics (2.0 cr)

**Minor Requirements**

**Minor Requirements**

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:
• 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)
• MKTG 4072 - Marketing-in-Action: Marketing Practicum (4.0 cr)
• MKTG 4074 - Data-Driven Marketing (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)
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 2018
- 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
Take 9 or more credit(s) from the following:

- **BLAW 3058** - The Law of Contracts and Agency (4.0 cr)
- **BLAW 3059** - Real Estate Law (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 Regulations (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 5624** - Strategic Management of Intellectual Property (3.0 cr)
- **LAW 5908** - Independent Research and Writing (1.0 - 2.0 cr)
Twin Cities Campus
Entrepreneurial Management B.S.B.
Strategic Management & Entrepreneur
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 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)
or APEC 1102H - Honors: 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**

**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)

**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)
  - 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 Industrial Relations (3.0 cr)
- HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
- IBUS 3021 - Human Resources Management 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 Communications**

- MGMT 3033W - Business Communication [WI] (3.0 cr)
- 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)

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Information current as of August 24, 2018
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 3058 - The Law of Contracts and Agency (4.0 cr)
• FINA 4221 - Principles of Corporate Finance (2.0 cr)
• FINA 4422 - Financial Modeling (2.0 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)
• 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 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 5290 - Topics in Planning (0.5 - 4.0 cr)
• PDES 2701 - Creative Design Methods (3.0 cr)
• PDES 3711 - Toy Product Design (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 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 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)
**Twin Cities Campus**

**Entrepreneurial Management Minor**

*Strategic Management & Entrepreneur*

**Curtis L. Carlson School of Management**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- 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**

This minor is only available for students pursuing a BSB degree in the Carlson School of Management.

**Required Courses**

Students must complete a minimum of 10 credits in the required section, plus additional credits from the elective section or required section for a total of 16 credits.

- 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)

Plus one from the following:

- MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
  - or MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
- MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)

**Electives**

Choose courses from the list below or courses not chosen above. 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 3058 - The Law of Contracts and Agency (4.0 cr)
- FINA 4221 - Principles of Corporate Finance (2.0 cr)
- FINA 4422 - Financial Modeling (2.0 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)
- 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 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 5290 - Topics in Planning (0.5 - 4.0 cr)
- PDES 2701 - Creative Design Methods (3.0 cr)
- PDES 3711 - Toy Product Design (4.0 cr)
• SCO 3041 - Project Management (2.0 cr)
• SCO 3056 - Supply Chain Planning and Control (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 2018
- 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 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)
or APEC 1102H - Honors: 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
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)

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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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 4221 - Principles of Corporate Finance (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)

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INS 4101 - Employee Benefits (2.0 cr)
INS 4200 - Insurance Theory and Practice (2.0 cr)
FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
   or FINA 4121H - Financial Markets and Interest Rates (2.0 cr)
FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
   or FINA 4321H - Portfolio Management and Performance Evaluation (2.0 cr)
Take 2 or more credit(s) from the following:
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• FINA 4122 - Banking Institutions (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)
• MATH 4065 - Theory of Interest (4.0 cr)
• MATH 5067 - Actuarial Mathematics I (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)

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)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 80
- Degree: Bachelor of Science in Business

The finance major develops a student's understanding of principles and techniques of effective financial decision making. It provides students with the skills and knowledge required to assist businesses, governments, or individuals with improving the value of the company, evaluating projects, measuring financial risk, raising funds, making investments, and understanding capital markets.

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)
or APEC 1102H - Honors: 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
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)

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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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 4221 - Principles of Corporate Finance (2.0 cr)
FINA 4422 - Financial Modeling (2.0 cr)
FINA 4522 - Options & Derivatives I (2.0 cr)
FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
or FINA 4121H - Financial Markets and Interest Rates (2.0 cr)
FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
or FINA 4321H - Portfolio Management and Performance Evaluation (2.0 cr)

Electives
Take 8 or more credit(s) from the following:
• FINA 4122 - Banking Institutions (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 - Finance Topics (2.0 - 4.0 cr)
• ACCT 5160 - Financial Statement Analysis (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)

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)
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 2018
- 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
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
This minor is only available for students pursuing a BSB in the Carlson School of Management.

Minor Courses
FINA 4221 - Principles of Corporate Finance (2.0 cr)
FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
or FINA 4121H - Financial Markets and Interest Rates (2.0 cr)
FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
or FINA 4321H - 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 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 - 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)
Twin Cities Campus
Human Resources and Industrial Relations B.S.B.
CSOM Work & Organizations
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 78
- Degree: Bachelor of Science in Business

Human Resource Management is the business function concerned with acquiring, training, compensating, and maintaining the human component of the enterprise. The human resource function involves the identification of the human skill, which combined with the business physical capital, ensures the ongoing success of the venture.

Human resource specialists have moved from being concerned only with record-keeping to being strategic partners as organizations recognize the crucial importance of talents to their success. Today, businesses compete as much based on human capital as they do on physical capital.

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)
- APEC 1102H - Honors: Principles of Macroeconomics (4.0 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)
- STAT 3022 - Data Analysis (4.0 cr)
- 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

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)

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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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 - The Individual in the Organization (2.0 cr)
HRIR 3051 - Compensation: Theory and Practice (2.0 cr)
HRIR 3071 - Union Organizing and Labor Relations (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 - The Individual and Organizational Performance (2.0 cr)
• HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
• HRIR 5000 - Topics in HRIR (2.0 cr)
• HRIR 5222 - Managing Diversity (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)
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 2018
• 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
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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management in Australia (4.0 cr)

Minor 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.

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 - The Individual in the Organization (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:
• HRIR 3032 - Training and Development (2.0 cr)
• HRIR 3042 - The Individual and Organizational Performance (2.0 cr)
• HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
• HRIR 5000 - Topics in HRIR (2.0 cr)
• HRIR 5222 - Managing Diversity (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)
• HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
• INS 4101 - Employee Benefits (2.0 cr)
• GCC 3014 - The Future of Work and Life in the 21st Century [TS] (3.0 cr)
Twin Cities Campus
International Business B.S.B.
Strategic Management & Entrepreneur
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- 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 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 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)
- or APEC 1102H - Honors: 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
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.

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)

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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3033W - Business Communication in Spain [WI] (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)
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)

CSOM International Courses
One course only may be double counted for the primary major and IB major.
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)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
- IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
- IBUS 3080 - Sustainability and Corporate Social Responsibility in Costa Rica (4.0 cr)
- IBUS 4010 - Management of Technology in the Middle East (3.0 cr)
- IBUS 4050 - Management of Innovation and Change (4.0 cr)
- IBUS 4082W - Brand Management [WI] (4.0 cr)

International Environment Breadth
May be completed abroad with advising and department approval. Courses may not count in more than one area of Depth, Breadth, or Business Foundations.

International Political Economy Survey Course
Take 1 or more course(s) from the following:
- 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)
- GEOG 3331 - 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)
- GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
- HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
- or GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)

Sociocultural Survey Course
Students may choose to complete a 3-6 credit internship with an academic seminar component during the semester abroad to complete this category.
Take 1 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)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (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)
- SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- SPAN 3510 - Issues in Hispanic Cultures (3.0 cr)

International Business Environment Depth
May be completed abroad with advising and department approval.
Students may choose to complete an upper division business language course for this category. Courses may not count in more than one area of Depth, Breadth, or Business Foundations.
Take 2 or more course(s) from the following:
- ACCT 5310 - International Accounting (2.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ALL 3676</td>
<td>Culture and Society of India [GP, SOCS]</td>
<td>3.0 cr</td>
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<tr>
<td>ANTH 3005W</td>
<td>Language, Culture, and Power [SOCS, DSJ, WI]</td>
<td>4.0 cr</td>
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<td>ANTH 3023</td>
<td>Culture and Society of India [GP, SOCS]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>FINA 4621</td>
<td>The Global Economy (Macro)</td>
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<td>FINA 4622</td>
<td>International Finance</td>
<td>2.0 cr</td>
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<td>GCC 3001</td>
<td>- Can We Feed the World Without Destroying It? [ENV]</td>
<td>3.0 cr</td>
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<td>GCC 3002</td>
<td>(Inactive)[GP]</td>
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<td>GCC 3003</td>
<td>- Seeking Solutions to Global Health Issues [GP]</td>
<td>3.0 cr</td>
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<td>GCC 3010</td>
<td>- Grand Challenge: The Global Climate Challenge: Creating an Empowered Movement for Change [CIV]</td>
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<td>GCC 3017</td>
<td>- World Food Problems: Agronomy, Economics and Hunger [GP]</td>
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<td>GCC 5008</td>
<td>- Policy and Science of Global Environmental Change [ENV]</td>
<td>3.0 cr</td>
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<td>GCC 5010</td>
<td>- Grand Challenge: The Global Climate Challenge: Creating an Empowered Movement for Change [CIV]</td>
<td>3.0 cr</td>
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<td>GEOG 3161</td>
<td>- Europe: A Geographic Perspective [GP]</td>
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<td>GEOG 3379</td>
<td>- Environment and Development in the Third World [SOCS, ENV]</td>
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<td>GER 3651</td>
<td>- Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV]</td>
<td>3.0 cr</td>
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<td>GLOS 3303</td>
<td>- Environment and Development in the Third World [SOCS, ENV]</td>
<td>3.0 cr</td>
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<td>- Europe: A Geographic Perspective [GP]</td>
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<td>- Culture and Society of India [GP, SOCS]</td>
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<td>- Social Change in Modern China</td>
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<td>MGMT 3900</td>
<td>- International Business Communication [GP]</td>
<td>3.0 cr</td>
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<td>MGMT 4080W</td>
<td>- Marketing Strategy [WI]</td>
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<td>MM 3001W</td>
<td>- Manufacturing in the Global Economy [WI]</td>
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<td>MM 4035</td>
<td>- Global Supply Chain Management</td>
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<td>OLPD 3380</td>
<td>- Developing Intercultural Competence</td>
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<td>POL 3477</td>
<td>- Political Economy of Development [SOCS, GP]</td>
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<td>PSY 3301</td>
<td>- Introduction to Cultural Psychology</td>
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<tr>
<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>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>
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<tr>
<td>MGMT 4500</td>
<td>- Senior Seminar in International Business</td>
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</tbody>
</table>

**Senior Seminar in International Business**

**MGMT 4500 - Senior Seminar in International Business (2.0 cr)**

**International Experience**

Students in the International Business major will complete a study abroad experience of at least one full semester in length. OR They may complete a study abroad experience of any length, PLUS an internship with an international organization. (Please speak with an advisor about acceptable internships.)

**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)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (3.0 cr)
- IBUS 4082W - Brand Management [WI] (4.0 cr)
- IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
- SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
Twin Cities Campus

International Business Minor
Strategic Management & Entrepreneur
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- 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.

International Business Foundation
The International Business Foundation courses must be completed at the Carlson School. Students who study abroad for a semester may choose to complete MGMT 4500 as one course in the Foundations category.

**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)
- **MKTG 4080W** - Marketing Strategy [WI] (4.0 cr)
- **IBUS 3010** - Introduction to Global Entrepreneurship (4.0 cr)
- **IBUS 3080** - Sustainability and Corporate Social Responsibility in Costa Rica (4.0 cr)
- **IBUS 4010** - Management of Technology in the Middle East (3.0 cr)
- **IBUS 4050** - Management of Innovation and Change (4.0 cr)
- **IBUS 4082W** - Brand Management [WI] (4.0 cr)
- **IBUS 4500** - Senior Seminar in International Business (2.0 cr)

International Environment Breadth
The International Environment Breadth courses may be completed abroad with advising and departmental approval. Students may choose to complete this category with one depth course from the IB major and one breadth course, or two breadth courses. Business language courses may not be used in the minor.

**International Political Economy Survey course**
Take 1 or more course(s) from the following:
- **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)
- **GEOG 3331** - 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)
- **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)
- **SOC 3417W** - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
•HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
or GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)

**Sociocultural Survey course**

Students may choose to complete a credit-bearing internship with an academic seminar component during the semester or summer abroad to complete this category.

Take 1 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)
- 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)
- GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (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)
- SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)
- SPAN 3510 - Issues in Hispanic Cultures (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 2018
- 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)
- 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)
- APEC 1102H - Honors: Principles of Macroeconomics (4.0 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)
- 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
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)

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

Human Resources
HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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
MGT 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 4491, Independent Study in Information Systems, may be considered for elective credit with department approval. Case competition credit may not fulfill elective credit.
Take 4 or more credit(s) from the following:
- 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 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)
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 2018
• 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
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
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

Minor Requirements
IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)
Electives
IDSc 4491, Independent Study in Information Systems, may be considered for elective credit with department approval. Case competition credit may not fulfill elective credit.
Take 8 or more credit(s) from the following:
• 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 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 4490 - Information Systems Special Topics (2.0 cr)
• IBUS 4471 - Information Systems and Innovation (4.0 cr)
Twin Cities Campus
Management Minor
Curtis L. Carlson School of Management
Curtis L. Carlson School of Management

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2018
• Required credits in this minor: 26 to 28

The management minor is available to students enrolled in a college 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, or 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

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)
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 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
Minor Courses
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
Take 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 Industrial Relations (3.0 cr)
  or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
  or IBUS 3021 - Human Resources Management 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.
Marketing
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 77 to 82
- Degree: Bachelor of Science in Business

Marketing is the strategic function between product development and sales. A marketing major provides students with a solid understanding of the business activities involved with marketing, including the identification and selection of target markets; the development of pricing, placement, and promotion of goods and services; and the management of relationships among business partners and their customers. Students receive a broad foundation in marketing concepts along with opportunities to pursue greater understanding and skills in specialty areas like sales, integrated communications, and research.

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 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)
- or APEC 1102H - Honors: 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)

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Information current as of August 24, 2018
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
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)

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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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
MKTG 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 4082W - Brand Management [WI] (4.0 cr)
- IBUS 4082W - Brand Management [WI] (4.0 cr)
- MKTG 4085 - Harnessing Consumer Irrationality (2.0 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 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)
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 2018
- 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
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
This minor is only available for students earning a BSB degree in the Carlson School of Management.

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 4080W - Marketing Strategy [WI] (4.0 cr)
- MKTG 4082W - Brand Management [WI] (4.0 cr)
- IBUS 4082W - Brand Management [WI] (4.0 cr)
- MKTG 4085 - Harnessing Consumer Irrationality (2.0 cr)
- MKTG 4090 - Marketing Topics (2.0 - 4.0 cr)
Twin Cities Campus
Public & Nonprofit Management B.S.B
Strategic Management & Entrepreneur
Curtis L. Carlson School of Management

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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)
or APEC 1102H - Honors: 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
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)

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
Human Resources
HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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)
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 4144 - Social Entrepreneurship (3.0 cr)
• PA 4190 - Topics in Public and Nonprofit Leadership and Management (1.0 - 3.0 cr)
• PA 5123 - Philanthropy in America: History, Practice, and Trends (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 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)
• MGMT 4100 - Topics in Management (2.0 - 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 4008 - Entrepreneurial Management (4.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 4040 - Negotiation Strategies (4.0 cr)
• PA 5920 - Skills Workshop (0.5 - 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 2018
- Required credits in this minor: 19

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
Prerequisites
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)

Minor 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.

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 3058 - The Law of Contracts and Agency (4.0 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 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 4424 - Corporate Investment Decisions [WI] (4.0 cr)
  - FINA 4900 - Finance Topics (2.0 - 4.0 cr)
  - MATH 4065 - Theory of Interest (4.0 cr)
  - MATH 5067 - Actuarial Mathematics I (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)
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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 80
- Degree: Bachelor of Science in Business

The Supply Chain major focuses on process excellence from both intra-organization and inter-organization points of view. Supply chain management manages the flow of goods, information, and services in order to deliver maximum value to the customer, while also minimizing the costs of the flow. Operations management is responsible for supplying the product or service of the organizations and managing the conversation or transformation process that converts inputs into outputs. The design of the major follows the industry-developed SCOR model of Plan-Source-Make-Deliver.

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)
or APEC 1102H - Honors: 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
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)

Immersion Core
Students complete the Immersion Core as a cohort.
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 Industrial Relations (3.0 cr)
or HRIR 3021H - Honors: Human Resource Management and Industrial Relations (3.0 cr)
or IBUS 3021 - Human Resources Management 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
SCO 3056 - Supply Chain Planning and Control (4.0 cr)
SCO 3059 - Quality Management and Lean Six Sigma (4.0 cr)
SCO 3045 - Sourcing and Supply Management (2.0 cr)
SCO 3048 - Transportation and Logistics 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)

**Electives**
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- SCO 3041 - Project Management (2.0 cr)
- SCO 3051 - Service Management (2.0 cr)
- MKTG 4060 - Marketing Channels (4.0 cr)
- IDSC 3202 - Analysis and Modeling of Business Systems (4.0 cr)
- BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
- MGMT 4040 - Negotiation Strategies (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 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)
- SCO 4065W - Supply Chain and Operations Strategy [WI] (4.0 cr)
- IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)
Supply Chain & Operations Management Minor
Supply Chain & Operations

Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2018
- Required credits in this minor: 15

Supply chain and operations management focuses on process excellence from both intra-organizational and inter-organizational points of view.

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 Operations Management
- SCO 3001 - Supply Chain and Operations (3.0 cr)

Minor Requirements
This minor is only available to students pursuing the BSB degree in the Carlson School of Management.

Minor Requirements
- SCO 3056 - Supply Chain Planning and Control (4.0 cr)
- SCO 3059 - Quality Management and Lean Six Sigma (4.0 cr)

Electives
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
- SCO 3041 - Project Management (2.0 cr)
- SCO 3045 - Sourcing and Supply Management (2.0 cr)
- SCO 3048 - Transportation and Logistics Management (2.0 cr)
- SCO 3051 - Service Management (2.0 cr)
- SCO 3072 - Managing Technologies in the Supply Chain (2.0 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 2018
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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 113
• 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 health care 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 37 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 (13 cr.)

BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 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)

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

**Dental Hygiene Admissions Requirements: Summer (6-7 cr.)**
- **Physiology**
  - PHSL 3050 - Physiology From Cells to Systems (3.0 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.

**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)
- DH 4315 - Foundations of Interprofessional, Professionalism, Communication, and Collaboration (1.0 cr)
- DH 2225 - Microbiology, Immunology, and Oral Health (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 2231 - Cariology and Applied Nutrition in Dental Hygiene Care (3.0 cr)
- DH 3151 - Oral and Maxillofacial Radiology (2.0 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 3125 - General and Oral Pathology (2.0 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 2221W - Periodontology [WI] (3.0 cr)
- DH 3224W - Dental Hygiene Care Process: Clinical Application IV [WI] (6.0 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)

BSDH/MDT Dual Degree Program

Dual degree 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.

Completion of all BSDH and MDT required courses.

**Term 1: Fall**
Students admitted to the dual degree program will also be taking undergrad courses this term, except DH 2111 to meet the bachelors requirements. The following course(s) meet the master's requirements for this term.
- DT 5429 - Introduction to Psychomotor Skill Development (1.0 cr)
- DT 5430 - Oral Anatomy (2.0 cr)
- DT 5431 - Oral Anatomy Laboratory (3.0 cr)

**Term 2: Spring**
Students admitted to the dual degree program will also be taking all of the same undergrad courses this term to meet the bachelors requirements. The following course meets the master's requirements for this term.
- DT 5130 - Preclinical Pediatric Dentistry (1.0 cr)

**Term 3: Summer**
Students admitted to the dual degree program will also be taking undergrad courses this term, except DH 3134, DH 3211 to meet the bachelors requirements. The following course(s) meet the master's requirements for this term.
- DT 5130 - Preclinical Pediatric Dentistry (1.0 cr)
- DT 5410 - Applied Dental Biomaterials (1.0 cr)
- DT 5432 - Operative Dentistry I (1.0 cr)
- DT 5433 - Operative Dentistry I Pre-Clinic Laboratory (2.0 cr)
- DT 5471 - Prosthodontic Topics for Dental Therapy (2.0 cr)

**Term 4: Fall**
Students admitted to the dual degree program will also be taking all of the same undergrad courses this term to meet the bachelors requirements. The following course meets the master's requirements for this term.
- DT 5140 - Preventive Pediatric Dental Clinic (1.0 cr)
- DT 5432 - Operative Dentistry I (1.0 cr)
- DT 5433 - Operative Dentistry I Pre-Clinic Laboratory (2.0 cr)
- DT 5434 - Operative Dentistry II Lecture (1.0 cr)
- DT 5435 - Operative Dentistry II for the Dental Therapist, Lab (1.0 cr)

**Term 5: Spring**
Students admitted to the dual degree program will also be taking all of the same undergrad courses this term to meet the bachelors requirements. The following course meets the Master's requirements for this term.
- DT 4460 - Essentials of Clinical Care I For the Dental Therapist (3.0 cr)
- DT 5321 - Treatment Planning for the Dental Therapist (1.0 cr)

**Term 6: Summer**
Students admitted to the dual degree program will now be taking only MDT courses towards their MA degree. The following course meets the master's requirements for this term.
- DT 4960 - Essentials of Clinical Care II for Dental Therapists (4.0 cr)

**Term 7: Fall**
Students admitted to the dual degree program will now be taking only 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 5460 - Essentials of Clinical Care I For the Dental Therapist (10.0 cr)
DT 5360 - Outreach Experiences I (1.0 cr)

Term 8: Spring
Students admitted to the dual degree program will now be taking only MDT courses towards their MA degree. The following course meets the master's requirements for this term.
DT 5000 - Dental Therapy Capstone Project (2.0 cr)
DT 5141 - Clinical Pediatric Dentistry III (2.0 cr)
DT 5320 - Comprehensive Care Clinic (1.0 - 5.0 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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 76 to 89
• 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 six 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 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.

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 1101W - Introduction to Design Thinking [AH, WI] (4.0 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)

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).

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)
ADES 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 (2.0 cr)
or PDES 3704 - Computer-Aided Design Methods (3.0 cr)
or PDES 3711 - Toy Product Design (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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 48 to 54
• 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.

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 must complete 30 credits before admission to the program. Freshmen and transfers 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
Prerequisite Courses, Primary Core
It is required that students complete the following classes prior to admission to the BDA:
ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
ARCH 2301 - Introduction to Drawing in Architecture (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
Additional Classes, BDA Primary Core
ARCH 3412 - Architectural History Since 1750 [HIS, GP] (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 are designated Arch 32XX. New courses will periodically be added to this list, but ANY Arch 32xx will be allowed for the design core.  
Take 12 - 18 credit(s) from the following:  
- **ARCH 3211** - BDA: Image, Authorship, and Architecture (2.0 cr)  
- **ARCH 3212** - BDA: Analytical Modeling of Contemporary Architecture (3.0 cr)  
- **ARCH 3221** - BDA: Masonry Design and Construction (3.0 cr)  
- **ARCH 3222** - BDA Box Problem (2.0 cr)  
- **ARCH 3223** - BDA: Screen Test: Metal Work (2.0 cr)  
- **ARCH 3250** - Design Workshop (1.0 - 6.0 cr)  
- **ARCH 3261** - BDA: The Art of Daylighting Design: Exquisite Rooms (0.0 cr)  
- **ARCH 3271** - BDA: Watercolor Sketching: Exploring Iconic Sites (2.0 cr)  

**BDA Secondary Core**  
These courses provide introductions to curricular core areas within the school. Take 3 or more courses 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 3611** - Design in the Digital Age (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)  
- **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 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)  

**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 3411W** - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)  
- **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)  
- **ARCH 3411V** - 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)  

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

**Accelerated**  
Students accepted to this track join first-year M. Arch students in their classes while enrolled as undergraduate students. Courses taken in their final year as an undergraduate count as elective credits toward the BDA degree, and if accepted into the graduate program will continue to year two (of three) of the M. Arch program.  
Students may apply at the end of their junior year of the BDA program (within 32 credits of completing the degree requirements) and apply and the end of their senior year to the graduate school to formally join the graduate program. At the time of application, all liberal education requirements and all required BDA coursework must be completed or in progress slated to be completed by the end of the semester. Eligibility to apply is based on BDA GPA as well as overall GPA. The preferred BDA GPA is 3.8 or higher.  
Students with a GPA of 3.5 to 3.8 may apply but must also submit a GRE score. Application to the accelerated program must include all materials needed to apply for the M. Arch. program (portfolio, letters of recommendation, writing samples). Students advancing to the second year of the three-year M. Arch program will apply to the graduate school during the normal application time (see http://arch.design.umn.edu/admissions/graduate). At that time, the application will only include the online graduate school application to the graduate program (no portfolio, letters of recommendation, writing samples, or GRE).
Twin Cities Campus
Architecture B.S.
School of Architecture
College of Design

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 98 to 99
• 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 architectures 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 12 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
Prereqs for the B.D.A. or B.S.
ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
ARCH 2301 - Introduction to Drawing in Architecture (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

Major coursework
ARCH 3281 - Undergraduate Architecture Studio I (6.0 cr)
ARCH 3282 - Undergraduate Architecture Studio II (6.0 cr)
ARCH 3611 - Design in the Digital Age (3.0 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)
ARCH 3421 - Architectural History Since 1750 [HIS, GP] (3.0 cr)
ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
ARCH 3421V - Architectural History Since 1750 [HIS, GP] (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)

Courses to be completed prior to year three of the program
Calculus
MATH 1142 - Short Calculus [MATH] (4.0 cr)
MATH 1271 - Calculus I [MATH] (4.0 cr)
Physics
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
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)
ARCH 4423 - Gothic Architecture (3.0 cr)
ARCH 4424 - Renaissance Architecture (3.0 cr)
ARCH 4425 - Baroque Architecture (3.0 cr)
ARCH 4428 - History and Culture of European Cities [HIS, GP] (3.0 cr)
ARCH 4432 - Modern Architecture (3.0 cr)
ARCH 4434 - Contemporary Architecture (3.0 cr)
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

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 2018
• 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 3412 - Architectural History Since 1750 [HIS, GP] (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 2018
- 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 83 to 89
- 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

- 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

All coursework must be taken A-F (with the exception of the internship).
Presentations/Public Speaking
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or DES 3309 - Storytelling and Design (3.0 cr)

Photography
ARTS 1701 - Introduction to Photography [AH] (4.0 cr)
or GDES 2361 - Design Process: Photography (3.0 cr)

Business, Economics, or Marketing Courses

Acct 1xxx
or acct 2xxx
or acct 3xxx
or acct 4xxx
or acct 5xxx
or APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
or APEC 1102 - Principles of Macroeconomics (3.0 cr)
or APEC 1251 - Principles of Accounting (3.0 cr)
or econ 1xxx
or econ 2xxx
or econ 3xxx
or econ 4xxx
or econ 5xxx
or mgmt 3xxx
or mktg 3xxx

Major Courses
Students select two out of the three classes as program required GD courses. If all three are taken, the third class will count as an elective.
Take 2 - 3 course(s) from the following:
• GDES 2361 - Design Process: Photography (3.0 cr)
• GDES 3312 - Color and Form in Surface Design (4.0 cr)
• GDES 4371 - Data Visualization Studio (3.0 cr)

Advanced Design Requirements
GDES 3201 - Career and Internship Preparation for Design (1.0 cr)
GDES 3351 - Text and Image (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 4363 - Graphic Design Portfolio (3.0 cr)
GDES 2399W - Design and its Discontents: Design, Society, Economy, and Culture [WI] (3.0 cr)
or GDES 2399V - Honors Design and its Discontents: Design, Society, Economy, and Culture [WI] (3.0 cr)
GDES 3352 - Identity and Symbols (3.0 cr)
or GDES 3352H - Honors: Identity and Symbols (3.0 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)

Basic Design Requirements
GDES 2342 - Web Design (3.0 cr)
GDES 2345 - Typography (4.0 cr)

Grand Challenge or Diversity and Social Justice
GCC 3xxx
or GCC 5xxx
or Take any course that fulfills the Diversity and Social Justice liberal education theme.

Electives
Two of the three electives must be GDES designated courses. Other GDES topics courses or GDES field study may be used for this requirement. See your advisor.
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 3341 - (un)Wrapping It Up: New Materials for Design, Design for New Materials (3.0 cr)
• DES 5165 - Design and Globalization (3.0 cr)
- DES 5168 - Evidence-Based Design (3.0 cr)
- DES 5185 - Human Factors in Design (3.0 cr)
- GDES 2361 - Design Process: Photography (3.0 cr)
- GDES 3311 - Illustration (3.0 cr)
- GDES 4312 - Advanced Graphic Design Print Projects (3.0 cr)
- GDES 4330 - Surface Fabric Design Workshop (4.0 cr)
- GDES 4371 - Data Visualization Studio (3.0 cr)
- GDES 4350 - Advanced Design Material Topics (3.0 cr)
- GDES 5311 - Illustration (3.0 cr)
- GDES 5341 - Interactive 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 - Toy Product Design (4.0 cr)
- GDES 3312 - Color and Form in Surface Design (4.0 cr)
- DES 3351 - Phenomenon of Everyday Design (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:
- 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 2018
• 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)

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)
• HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
Twin Cities Campus
Housing Studies B.S.
Design, Housing & Apparel
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 67 to 80
- This program requires summer terms.
- Degree: Bachelor of Science

We are no longer accepting new students into this program. An undergraduate minor in housing and community development is open for enrollment. A post-baccalaureate graduate certificate in housing studies, and the MS, MA, and PhD in housing studies are open for enrollment.

The housing studies program allows students to study shelter in its multiple dimensions. Coursework in the program includes social and behavioral sciences, economics, public policy, planning, and technology. After first acquiring a broad background of housing courses, students select one of four areas of concentration: community development and policy, sustainability, management and finance, or selected populations. The housing studies program provides the academic background and professional preparation needed for graduate studies leading to college teaching, research, or planning/administrative positions. Depending upon prior coursework, the housing studies major requirements can often be completed in two years. Students are encouraged to meet with an advisor to discuss their specific situations.

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 coursework in the major must be taken A-F (with the exception of the internship).

Communication Courses
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
or ENGL 3027W - The Essay [WI] (4.0 cr)
or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)

Required Major Coursework
An internship of at least 300 hours in a situation related to the student's area of specialization is required. Students must complete at least half of the required core program courses before enrolling in the internship (HSG 4196).
HSG 1461 - Introduction to Housing (3.0 cr)
HSG 3462 - Housing and Community Development (3.0 cr)
HSG 4196 - Internship in Housing Studies (1.0 - 4.0 cr)
HSG 4461 - Housing Development and Management (4.0 cr)
HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
HSG 5463 - Housing Policy (3.0 cr)
SSM 4413 - Systems Approach to Residential Construction (4.0 cr)
DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
or ARCH 1281 - Design Fundamentals I [AH] (4.0 cr)
or LA 1201 - Learning from the Landscape [AH, DSJ] (3.0 cr)
HSG 4465 - Housing in a Global Perspective (3.0 cr)
HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
  or HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
  or ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  or ECON 1102 - Principles of Macroeconomics (4.0 cr)
FSOS 3101 - Personal and Family Finances (3.0 cr)
  or FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
  or FSOS 2106 - Family Resource Management (3.0 cr)
GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
  or PA 4200 - Urban and Regional Planning (3.0 cr)
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
  or SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (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)

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)
- ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- ENGL 3027W - The Essay [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)
- FSOS 4154 - Families and Aging (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
- SOC 3211W - American Race Relations [DSJ, WI] (3.0 cr)
- SOC 3451W - Cities & Social Change [WI] (3.0 cr)
- URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
- WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [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 3613W - 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)

Program Sub-plans

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

Management/Finance

Courses in economics and business prepare students to work in public and private housing management, state finance agencies, commercial banks, and mortgage and title companies.

Students must complete at least 20 credits for the concentration.

Management and Finance Concentration

Courses listed below are suggested, but not inclusive. Students should consult with an advisor for other appropriate courses. Concentration courses must be primarily upper division and must be taken A-F. A minimum grade of C- is required. Note: a course may be used only once to satisfy program requirements.

Completion of a minor in applied economics, economics, entrepreneurial management, or management may be used toward the credit requirements in this concentration.

Take 20 or more credit(s) from the following:
- APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- APEC 3002 - Applied Microeconomics: Managerial Economics (4.0 cr)
- APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)
Selected Populations
An area of concentration in selected populations may be fulfilled in two ways.

Option One and Option Two

Option One
Complete an appropriate minor along with additional credits in supporting courses. A concentration can be done in such minors as African-American and African studies; American Indian studies; Chicano studies; family social science; gay, lesbian, bisexual, and transgendered minor; gender, women, and sexuality studies; global studies; Latin American studies; social justice; or youth studies. For admission procedures and minor requirements, contact the department offering the minor.
Minor and coursework to total 20 credits

-OR-

Option Two
Concentrate on one or more special populations for which no specific undergraduate minor is offered. Choose courses from selected populations: older persons, low income, communities of color, and households with children. Courses from either list are approved for selected populations option two.

Selected Populations: older persons
Take 20 or more credit(s) from the following:
• HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
• FSOS 4154 - Families and Aging (3.0 cr)
• KIN 5385 - Exercise for Healthy Aging & Disease Prevention and Management (3.0 cr)
• PA 5412 - Aging and Disability Policy (3.0 cr)
• PUBH 3001 - Personal and Community Health (2.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)

Selected Populations: low income, communities of color, and households with children
Take 20 or more credit(s) from the following:
• FSOS 3101 - Personal and Family Finances (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 2106 - Family Resource Management (3.0 cr)
• FSOS 4153 - Family Financial Counseling (3.0 cr)
• PA 5401 - Poverty, Inequality, and Public Policy (3.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• POL 1001 - American Democracy in a Changing World [SOCS] (4.0 cr)
• PUBH 3001 - Personal and Community Health (2.0 cr)
• PUBH 3003 - Fundamentals of Alcohol and Drug Abuse (2.0 cr)
• SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
• SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
• SOC 3211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SW 1001 - Introduction to the World of Social Work: A Global Perspective (3.0 cr)
• SW 5101 - Historical Origins and Contemporary Policies and Programs in Social Welfare (3.0 - 4.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [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)

Sustainability
Courses in sustainability prepare students to work in government, housing construction and development firms, and in organizations focused on sustainability, including energy, conservation, housing inspections, and historic preservation organizations.

Sustainability

Option 1: Sustainability: Housing and Community
Courses listed below are suggested but not inclusive. Students should consult with an advisor for other appropriate courses. Concentration courses must be primarily upper division and must be taken A-F. A minimum grade of C- is required. Note: a course may be used only once to satisfy housing studies program requirements. Sustainability Studies minor and coursework to total 20 credits.

Take 20 or more credit(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)
• ANTH 3041 - Ecological Anthropology (3.0 cr)
• ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)
• APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
• ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
• BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
• CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (3.0 cr)
• EEB 3001 - Ecology and Society [ENV] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (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)
• 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 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
• ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (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 5245 - Sustainable Land Use Planning and Policy (3.0 cr)
• ESPM 5602 - Regulations and Corporate Environmental Management (3.0 cr)
• FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
• ESCI 3005 - Earth Resources (3.0 cr)
• GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• GLOS 3303 - Geography and Development in the Third World [SOCS, ENV] (3.0 cr)
• HSCI 3244 - Nature's History: Science, Humans, and the Environment [HIS, ENV] (3.0 cr)
• HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Environmental & Climate Justice [ENV] (4.0 cr)
• HECU 3592 - Environmental Sustainability: Ecology and Socio-ecological Systems Change [SOCS] (4.0 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)
• PA 5232 - Transportation Policy, Planning, and Deployment (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 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
• SUST 4004 - Sustainable Communities (3.0 cr)
• URSB 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
• HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
  or ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)

-OR-
**Option 2: Sustainability: Housing Technology**

Courses listed below are suggested, but not inclusive. Students should consult with an advisor for other appropriate courses. Concentration courses must be primarily upper division and must be taken A-F. A minimum grade of C- is required. Note: A course may be used only once to satisfy program requirements.

- **ARCH 3412** - Architectural History Since 1750 [HIS, GP] (3.0 cr)
- or **ARCH 4671** - Historic Preservation (3.0 cr)
- or **ARCH 4672** - Historic Building Conservation (3.0 cr)
- or **ARCH 5673** - Historic Property Research and Documentation (3.0 cr)
- or **SSM 4416** - Building Testing and Diagnostics (2.0 cr)
- or **HSG 3482** - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
- or **HSG 4465** - Housing in a Global Perspective (3.0 cr)
- or **HSG 5481** - Promoting Independence in Housing and Community (3.0 cr)
- or **IDES 2612** - Interior Materials and Specifications [ENV] (4.0 cr)
- or **IDES 2613** - Interior Structures, Systems, and Life Safety (4.0 cr)
- or **PUBH 3001** - Personal and Community Health (2.0 cr)
- or **PUBH 3004** - Basic Concepts in Personal and Community Health (4.0 cr)
- or **PUBH 3102** - Issues in Environmental and Occupational Health (3.0 cr)
- or **WRIT 4573W** - Writing Proposals and Grant Management [WI] (3.0 cr)

**Comm Dev/Policy**

Courses in planning, geography, political science, and urban studies prepare students to work with housing and redevelopment authorities, city or regional planning departments, and nonprofit organizations in policy making, planning, and housing development.

17 credits from a variety of courses are required.

**Community Development and Policy Concentration**

Courses listed below are suggested, but not inclusive. Students should consult with an advisor for other appropriate courses. Concentration courses must be primarily upper division and must be taken A-F. A minimum grade of C- is required. Note: A course may be used only once to satisfy program requirements.

Completion of a minor in landscape design and planning, geography, social justice, or urban studies may be used toward the credit requirements in this concentration.

Take 17 or more credit(s) from the following:

- **FSOS 3102** - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
- **GEOG 3371W** - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- **GEOG 3373** - Changing Form of the City [HIS, GP] (3.0 cr)
- **GEOG 5361** - Geography and Real Estate (4.0 cr)
- **HSG 4465** - Housing in a Global Perspective (3.0 cr)
- **HSG 5481** - Promoting Independence in Housing and Community (3.0 cr)
- **PA 4200** - Urban and Regional Planning (3.0 cr)
- **PA 5002** - Introduction to Policy Analysis (1.5 cr)
- **PA 5004** - Introduction to Planning (3.0 cr)
- **PA 5013** - Law and Urban Land Use (1.5 cr)
- **PA 5212** - Managing Urban Growth and Change (3.0 cr)
- **POL 1001** - American Democracy in a Changing World [SOCS] (4.0 cr)
- **SOC 1001** - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
- **SOC 3201** - Inequality: Introduction to Stratification (3.0 cr)
- **SOC 3211W** - American Race Relations [DSJ, WI] (3.0 cr)
- **SOC 3451W** - Cities & Social Change [WI] (3.0 cr)
- **URBS 1001W** - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
- **URBS 3301W** - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
- **URBS 3751** - Understanding the Urban Environment [ENV] (3.0 cr)
- **WRIT 4573W** - Writing Proposals and Grant Management [WI] (3.0 cr)
  or **HSG 3482** - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
  or **ESPM 3601** - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
Twin Cities Campus
Interdisciplinary Design Minor
DESIGN Interdiscp Assoc Dean
College of Design

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2018
• 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. DES 1111 may be taken A/F or S/N, depending upon how it was offered.

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 2011 - Introduction to Engineering (4.0 cr)
or PDES 2702 - Concept Sketching (3.0 cr)
or PDES 3711 - Toy Product Design (4.0 cr)
or PDES 5702 - Concept Sketching and Rendering (3.0 cr)
or PDES 5711 - Toy Product Design (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 - 13 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 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
• ARCH 3511 - Material Transformations: Technology and Change in the Built Environment [TS] (3.0 cr)
• 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 4423 - Gothic Architecture (3.0 cr)
• ARCH 4424 - Renaissance Architecture (3.0 cr)
• ARCH 4425 - Baroque Architecture (3.0 cr)
• ARCH 4432 - Modern Architecture (3.0 cr)
• ARCH 4434 - Contemporary Architecture (3.0 cr)
• ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
• ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
• DES 2101 - Design and Visual Presentation (2.0 cr)
• DES 3131 - User Experience in Design (4.0 cr)
• DES 3141 - Technology, Design, and Society [TS] (3.0 cr)
• DES 3160 - Topics in Design (1.0 - 4.0 cr)
• DES 3170 - Topics in Design (1.0 - 4.0 cr)
• DES 3309 - Storytelling and Design (3.0 cr)
• DES 3311 - Travels in Typography (3.0 cr)
• DES 3321 - Furniture Design: Exploration (3.0 cr)
• DES 3322 - Furniture Design, Practice (4.0 cr)
• DES 3331 - Street Life Urban Design Seminar (3.0 cr)
• DES 3341 - (un)Wrapping It Up: New Materials for Design, Design for New Materials (3.0 cr)
• DES 3351 - Phenomenon of Everyday Design (3.0 cr)
• DES 4160 - Topics in Design (1.0 - 4.0 cr)
• DES 4165 - Design and Globalization [DSJ] (3.0 cr)
• DES 5160 - Topics in Design (1.0 - 4.0 cr)
• DES 5185 - Human Factors in Design (3.0 cr)
• EE 1301 - Introduction to Computing Systems (4.0 cr)
• GCC 3015 - Bioinspired Approaches to Sustainability - Greening Technologies and Lives [TS] (3.0 cr)
• GDES 2342 - Web Design (3.0 cr)
• GDES 2345 - Typography (4.0 cr)
• GDES 2361 - Design Process: Photography (3.0 cr)
• GDES 2399W - Design and Its Discontents: Design, Society, Economy and Culture [WI] (3.0 cr)
• GDES 3311 - Illustration (3.0 cr)
• GDES 3312 - Color and Form in Surface Design (4.0 cr)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GDES 4330 - Surface Fabric Design Workshop (4.0 cr)
• GDES 4345 - Advanced Typography (4.0 cr)
• GDES 4371 - Data Visualization Studio (3.0 cr)
• GDES 5311 - Illustration (3.0 cr)
• GDES 5341 - Interactive 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)
• HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
• IDES 2612 - Interior Materials and Specifications [ENV] (4.0 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 4616 - Sustainable Commercial Interior Design (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• KIN 3505 - Intro to Human-Centered Design (3.0 cr)
• LA 1001 - Sustainability by Design [ENV] (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 3413 - Introduction to Landscape Architectural History [HIS, GP] (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 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 2777 - Product Form and Model Making (2.0 cr)
• PDES 3704 - Computer-Aided Design Methods (3.0 cr)
• PDES 3705 - History and Future of Product Design (3.0 cr)
• PDES 3711 - Toy Product Design (4.0 cr)
• PDES 3715 - Design and Food (4.0 cr)
• PDES 5701 - Creativity, Idea Generation, and Innovation (3.0 cr)
• PDES 5702 - Concept Sketching and Rendering (3.0 cr)
• PDES 5703 - Product Form and Model Making (4.0 cr)
• PDES 5705 - History and Future of Product Design (3.0 cr)
• PDES 5711 - Toy Product Design (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)
• ARCH 3411V - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
  or ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
• ARCH 3412 - Architectural History Since 1750 [HIS, GP] (3.0 cr)
  or ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
Interior Design B.S.

Program Type: Baccalaureate

Requirements for this program are current for Fall 2018

- 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).

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 3412 - Architectural History Since 1750 [HIS, GP] (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 2018
- 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 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 64 to 68
- 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

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)
- ESPM 3101 (Inactive) (3.0 cr)
- ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
- ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
- FNRM 3203 - Forest Fire and Disturbance Ecology (3.0 cr)
- FNRM 5153 - Forest Hydrology & Watershed Biogeochemistry (3.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
- HORT 5071 - Ecological Restoration (4.0 cr)
- LAAS 5515 - Soil Formation: Earth Surface Processes and Biogeochemistry (3.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- SOIL 5555 - Wetland Soils (3.0 cr)
- URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
- HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 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:

- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- 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 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
- GEOF 3351W - Geography and Public Policy [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 3973 - Geography of the Twin Cities [SOCS] (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)
- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
- URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
- URBS 3751 - Understanding the Urban Environment [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:
- **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] (4.0 cr)**
- **HORT 4061W - Turfgrass Management [WI] (3.0 cr)**
- **URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)**
- **URBS 3301W - American Cities As Settings for Cultural Diversity [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 2018
- 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 - Making the Mississippi [CIV] (3.0 cr)
- LA 3514 - Making the Mississippi [CIV] (3.0 cr)
- LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)
- LA 4001 - Sustainable Landscape Design and Planning Practices (3.0 cr)
- LA 4755 - 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
Product Design B.S.
DHA Product Design
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 89 to 91
- 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 (2.0 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)
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE 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
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.

Product Design Core
DES 3131 - User Experience in Design (4.0 cr)
DES 3201 - Career and Internship Preparation for Design (1.0 cr)
ME 2011 - Introduction to Engineering (4.0 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 Methods (3.0 cr)
PDES 3705 - History and Future of Product Design (3.0 cr)
PDES 3706 - Designing for Manufacture (4.0 cr)
PDES 3711 - Toy Product Design (4.0 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)
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
  or EE 1301 - Introduction to Computing Systems (4.0 cr)
  or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
  or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (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)

**Internships**
Students perform two separate internships, one credit each term.
PDES 3196 - Product Design Internship (1.0 cr)

**Electives**
Take 2 - 3 course(s) totaling 6 - 8 credit(s) from the following:
- ANTH 4035 - Ethnographic Research Methods (3.0 cr)
- CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
- DES 5185 - Human Factors in Design (3.0 cr)
- GDES 2342 - Web Design (3.0 cr)
- GDES 3353 - Packaging and Display (3.0 cr)
- ANTH 4121 - Business Anthropology (3.0 cr)
- MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
- MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
- MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
- ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
- DES 3322 - Furniture Design, Practice (4.0 cr)
- ARTS 3140 - Figure Drawing (4.0 cr)
- PDES 3715 - Design and Food (4.0 cr)
- MKTG 3001 - Principles of Marketing (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)
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 2018
- 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 - Toy Product Design (4.0 cr)
  or PDES 5711 - Toy Product Design (4.0 cr)
  Take 6 or more credit(s) from the following:
    - ANTH 4121 - Business Anthropology (3.0 cr)
    - ANTH 4035 - Ethnographic Research Methods (3.0 cr)
    - CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (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)
    - ESFM 3603 - Environmental Life Cycle Analysis (3.0 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 2703 - Concept Visualization and Presentation 1 (3.0 cr)
    - PDES 2777 - Product Form and Model Making (2.0 cr)
    - PDES 3704 - Computer-Aided Design Methods (3.0 cr)
    - PDES 3705 - History and Future of Product Design (3.0 cr)
    - PDES 3706 - Designing for Manufacture (4.0 cr)
    - PDES 3715 - Design and Food (4.0 cr)
    - PDES 4193 - Directed Study in Product Design (1.0 - 4.0 cr)
    - ME 2011 - Introduction to Engineering (4.0 cr)
Twin Cities Campus
Public Interest Design Minor
 DESIn Intridiscp Assoc Dean

College of Design

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2018
• 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] (4.0 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 - Strategic Decision Making and Problem Solving (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 2018
• Required credits to graduate with this degree: 120
• Required credits within the major: 73 to 74
• 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
All coursework in the major must be taken A-F unless it is only offered S/N.

Required Retail Merchandising Basic Courses
- DES 1111 - Creative Problem Solving (3.0 cr)
- MATH 1031 - College Algebra and Probability [MATH] (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)
- 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)
  - or MGMT 1001H - Honors: Contemporary Management (3.0 cr)
  - or MGMT 1001 - Contemporary Management (3.0 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 3711 - Toy Product Design (4.0 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 2018
- 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 4117W - Retail Environments and Human Behavior [WI] (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)
Twin Cities Campus
University Honors Program

Program Type: Other
Requirements for this program are current for Fall 2018
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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
**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 2018
- Required credits to graduate with this degree: 12
- N/A

The undergraduate certificate in election administration is primarily geared to professional election officials across the country who have not received an undergraduate degree and preparing them for higher-level positions in election administration. Students will acquire and develop the skills and knowledge of election operations and procedures they need to further their existing careers in election administration. All courses are offered in an online format and include topics such as election law, election design, 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](http://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](http://www.umn.edu/registrar/). 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.

**Required Courses**

- PA 3969 - Survey of Election Administration (3.0 cr)
- PA 3972 - Elections and the Law (3.0 cr)
- PA 3973 - Strategic Management of Election Administration (2.0 cr)
- PA 3974 - Election Administration Capstone Project (2.0 cr)

**Elective Courses**

Take 2 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 - Cybersecurity and Elections (1.0 cr)
**Twin Cities Campus**

**Mortuary Science B.S.**

*Medical School - Adm*

**Medical School**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 86 to 92
- 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.mortuaryscience.umn.edu), or contact the program office 612-624-6464.

**Accreditation:**
The mortuary science program at the University of Minnesota is accredited by the American Board of Funeral Service Education (ABFSE), 992 Mantua Pike, Suite 108, Woodbury Heights, NJ 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. To request a printed copy of this program’s rates, go to the Program of Mortuary Science office, A275-3 Mayo Memorial Building, 420 Delaware St. SE, Minneapolis, MN 55455 or request by e-mail at mortsci@umn.edu, or by telephone (612) 624-6464.

**Mission:**
Funeral directors are health care professionals who serve others during a time of loss, pain, and grief. The mission of the program 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.

**Aims:**
The program of mortuary science states the importance of funeral service personnel as
1. members of a human services profession;
2. members of the community in which they serve;
3. participants in the relationship between bereaved families and those engaged in the funeral service profession;
4. professionals knowledgeable of and compliant with federal, state, provincial/territorial, and local regulatory guidelines in the geographic area where they practice;
5. professionals sensitive to the responsibility for public health, safety, and welfare in caring for human remains.

**Objectives:**
The program recognizes an obligation to students, the profession, and the community. Its objectives have been adopted by the Program's Advisory Board and conform with the accreditation standards set forth by the American Board of Funeral Service Education.

The objectives of the program are:
1. To enlarge the background and knowledge of students about the funeral service profession;
2. To educate students in every phase of funeral service, and to help enable them to develop proficiency and skills necessary for the profession;
3. To educate students concerning the responsibilities of the funeral service profession to the community at large;
4. To emphasize high standards of ethical conduct;
5. To provide a curriculum at the post-secondary level of instruction;
6. To encourage student and faculty research in the field of funeral service;
7. To encourage faculty and students to be advocates for the profession of funeral service.

**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 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

Upon admission, students are required to submit proof of certain immunizations and vaccinations. Students must submit a professional statement and two letters of recommendation as part of the admission process. Criteria for the essay and letters of recommendation are available on the program's web site: www.mortuaryscience.umn.edu.

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

Required prerequisites
Pre-Mortuary Science Courses
Students usually enter the program at the beginning of their junior year. Freshmen and sophomores are urged to contact the program office for counsel in planning an appropriate preprofessional program. The following courses are required for admission to the BS program (except PUBH 3001 and PHAR 1002, which are not required but strongly recommended).

- **Biol 1001** - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
- or **Biol 1009** - General Biology [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)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (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)

**ACCT 2050** - Introduction to Financial Reporting (4.0 cr)

**COMM 3402** - Introduction to Interpersonal Communication (3.0 cr)

**PSY 1001** - Introduction to Psychology [SOCS] (4.0 cr)

**SOC 1001** - Introduction to Sociology [SOCS, DSJ] (4.0 cr)

**WRIT 1301** - University Writing (4.0 cr)

**CHEM 1015** - Introductory Chemistry: Lecture [PHYS] (3.0 cr)

**CHEM 1017** - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)

**BIOL 3272** - Applied Biostatistics (4.0 cr)
- or **EPSY 3264** - Basic and Applied Statistics [MATH] (3.0 cr)
- or **EPSY 5261** - Introductory Statistical Methods (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 1001** - Introduction to the Ideas of Statistics [MATH] (4.0 cr)
- or **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)

Letters of Recommendation, Professional Statement
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.mortuaryscience.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. 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
60 credits of upper division coursework, including required courses within the major, are required. Must attend a National Board Examination review session and take the practice National Board Examination prior to being cleared for graduation and the National Board Examination.

Junior Year Courses
Junior Year Fall Semester
MORT 3014 - Funeral Service Rules and Regulations (2.0 cr)
MORT 3018 - Funeral Service Practice I (3.0 cr)
MORT 3021W - Funeral Service Psychology and Arrangements Theory [WI] (3.0 cr)
MORT 3171 - Human Anatomy Laboratory (2.0 cr)
MORT 3371 - Death, Dying and Bereavement Across Cultures and Religions (3.0 cr)
PHAR 1002 - Medical Terminology (2.0 cr)

Junior Year Spring Semester
MORT 3019 - History & Practice of Funeral Directing II: 1861 - Present (3.0 cr)
MORT 3022W - Funeral Service Arrangements Laboratory [WI] (3.0 cr)
MORT 3048 - Microbiology and Pathology for Funeral Service (4.0 cr)
MORT 3065 - Embalming Chemistry (2.0 cr)
PUBH 3001 - Personal and Community Health (2.0 cr)

Senior Year Courses
Senior Year Fall Semester
MORT 3016 - Funeral Service Marketing and Merchandising (3.0 cr)
MORT 3025 - Business Law (3.0 cr)
MORT 3051 - Restorative Art (2.0 cr)
MORT 3061 - Embalming Theory (3.0 cr)
MORT 3151 - Restorative Art Laboratory (1.0 cr)
MORT 3161 - Embalming Laboratory (1.0 cr)

Senior Year Spring Semester
MORT 3012W - Organization and Management of Funeral Business [WI] (3.0 cr)
MORT 3030 - Funeral Service Law (2.0 cr)

Senior Year Summer Courses
Students are required to complete two clinical rotations totaling a minimum of 6 credits and no more than 14. One rotation must be completed during May session. The second may be completed in spring or summer term. Students who have completed a program approved state funeral directing internship, prior to matriculation, may petition to be exempt from a second required clinical rotation (3 credits).
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] (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 2018
- Required credits to graduate with this degree: 7 to 28
- This program is 8 terms (4 years) long.

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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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

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

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2018
• 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
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
•Rochester only
BIOL 2331 must be taken A-F.
• BIOL 2331 - Anatomy and Physiology I (4.0 cr)

**Spring**
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
  - or BIOL 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 [SOC, 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 - Life Span, Growth, and Development I (2.0 cr)
    - NURS 3691 - Life Span, Growth, and Development II (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 - Nurse as Professional: Honors (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 SOC 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.
Twin Cities Campus

University Honors Program

Program Type: Other
Requirements for this program are current for Fall 2018
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 expected 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 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); each must be a minimum of 2 credits and one must be either an Honors Seminar (HSEM) or Grand Challenge Course (GCC).

Five additional Honors Experiences (course or non-course)
Additional courses—beyond 3—required (H or V - minimum of 2 credits); Non-course experiences including faculty-sanctioned mentor-supervised independent work of at least 45 hours e.g. faculty-directed research or creative activity, internship, Honors courses abroad or abroad experiences with the OLPD3330H add-on, UROP, UHP NEXUS Experiences, finalist status in a National/International Scholarship competition.

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 successfully complete the supporting or capstone Honors coursework required by their program, college, or UHP, minimum one-semester, one-credit course. Programs or colleges may require more than one semester of coursework including thesis-preparation or research coursework before the senior year. The course option is determined by major in which the thesis work is completed.

The Honors Thesis
Students must submit documentation of the final thesis/project approved by all three committee members.
Medical Laboratory Sciences B.S.

Allied-Medical Technology

Academic Health Center Shared

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2018
- Required credits to graduate with this degree: 120
- Required credits within the major: 87
- This program is 9 terms (4½ years) long.
- This program requires summer terms.
- Degree: Bachelor of Science

The medical laboratory sciences B.S. degree program consists of two years of prerequisite courses and a two and a half year professional program sequence. Students are typically admitted to the professional program sequence after completing the prerequisites. Students may also be admitted directly into the final professional year after completion of the prerequisites and the upper division science requirements. Admission is once a year for the upcoming fall semester. The program has a full-time hybrid delivery (more than 50% online delivery) format offered through online modules, 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.

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

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 Standard (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 University of Minnesota Academic Health Center students.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.
Required prerequisites
Preparatory Courses
Students must take one statistics course and either pre-calculus or calculus

- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)

- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 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)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- PHSL 3051 - Human Physiology (4.0 cr)
- BIOL 1009 - General Biology [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 students must have liberal education requirements completed by the end of the spring semester before beginning the Year 4 curriculum. MICB 4131, LAMP 4177, and MLSP 1010 are highly recommended but not required for students pursuing a BS degree in medical laboratory sciences. In accordance with Minnesota law, a criminal background check is required of each student before clinical courses. The program arranges this background check. Students are placed in a variety of clinical settings during their clinical coursework which may be in Minnesota or surrounding states. Students are required to submit an exit survey as a condition of completion of the program.

Junior Year Courses
- BIOC 3021 - Biochemistry (3.0 cr)
- 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)
- 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)

Senior Year Courses
- 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 5313 - Chemical Analysis in Health and Disease (3.0 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 5312 - Body Fluid Analysis (2.0 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 or fall term following the senior year, including clinical chemistry, hematology and coagulation, transfusion medicine, and microbiology.

- 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)

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 a course from the following list. Both of these courses are required within the MLS major-specific requirements.
Take 0 - 1 course(s) from the following:
• MLSP 5011W - Professional Issues in the Health Care Community [WI] (2.0 cr)
• MLSP 5014W - Laboratory Operations and Management in Health Care Systems [WI] (2.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Medical Laboratory Sciences Certificate
Allied-Medical Technology
Academic Health Center Shared

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2018
• Required credits to graduate with this degree: 38
• 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 once a year 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.