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.

The University of Minnesota is an equal opportunity educator and employer. This publication is available in alternative formats upon request. Contact the Office of Admissions, 240 Williamson Hall, 231 Pillsbury Dr. SE, Minneapolis, MN 55455-0213, 612-625-2008, or TTY 612-625-9051.
### University of Minnesota Twin Cities Undergraduate Programs 2016-2018

*Indicates a free-standing minor

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<td>Aerospace Engineering and Mechanics B.A.E.M.</td>
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<td>Mortuary Science B.S.</td>
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<td>School of Nursing</td>
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<td>Nursing B.S.N.</td>
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<td>Medical Laboratory Sciences Certificate</td>
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Twin Cities Campus
Behavioral Biology Minor
Ecology, Evolution & Behavior
College of Biological Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2016
• Required credits in this minor: 15 to 20
• 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)
• BIOL 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:

- 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)
- ENT 4231 - Insect Behavior (3.0 cr)
- FW 4401 - Fish Physiology and Behavior (3.0 cr)
- FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
- NSCI 3100 - Mind and Brain (3.0 cr)
- NSCI 3102W - Introduction to 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 5012 - Learning and Cognition in Animals (4.0 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 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 - Directed 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)
- PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PBIO 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- PBIO 4993 - Directed Studies (1.0 - 7.0 cr)
- PBIO 4994 - Directed Research (1.0 - 6.0 cr)
Twin Cities Campus
Biochemistry B.S.
Biochemistry, Molecular Biology, & Biophysics TCBS
College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 to 87
- Degree: Bachelor of Science

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

Earning a B.S. 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
Freshmen students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)
Take 3 or more credit(s) from the following:
- BIOL 3270 - Introduction To Systems Biology (3.0 cr)
- CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- BIOL 3272 - Applied Biostatistics (3.0 cr)
or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I (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 CHEM 2304 - Organic Chemistry II for the Life Sciences (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)
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)

Molecular and Cellular Biology

BIOC 3960 - Research Topics in Biochemistry (1.0 cr)
BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
or CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)

Ecology, Evolution, and Biodiversity

Take 1 or more course(s) from the following:
- BIOL 3807 - Ecology (4.0 cr)
- EEB 3407 - Ecology (3.0 cr)
- EEB 3406W - Ecology [WI] (3.0 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 3960 - Research Topics in Biochemistry (1.0 cr)
BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
or CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)

Upper Division Biochemistry Electives
Take 1 or more course(s) from the following:
- BIOC 4351 - Protein Engineering (3.0 cr)
- BIOC 5213 - Selected Topics in Molecular Biology (3.0 cr)
- BIOC 5216 - Current Topics in Signal Transduction (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)

Upper Division Lab
Take 1 or more course(s) from the following:
• BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 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 Cell 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.

Take 2 or more credit(s) from the following:
• BIOC 4225 - Laboratory in NMR Techniques (1.0 cr)
• BIOC 4325 - Laboratory in Mass Spectrometry (1.0 cr)
• BIOC 4994 - Directed Research (1.0 - 6.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)

Upper Division Life Sciences Electives
Take 6 or more credit(s) from the following:
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 3807 - Ecology (4.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
• BIOL 4121 - Microbial Ecology and Applied Microbiology (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 4413 - Nucleic Acids (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] (3.0 cr)
• GCC 5003 - Grand Challenge: Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GCD 4034 - Molecular Genetics (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 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)
• NSCI 3101 - Introduction to Neurobiology I: Molecular, Cellular, and Systems (3.0 cr)
• NSCI 3102W - Intro to Neurobiology II: Perception and Behavior [WI] (3.0 cr)
• NSCI 5300 - Biomedical Microscopy & Digital Imaging (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)
• GCC 3007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
  or GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
• EEB 3409 - Evolution (3.0 cr)
  or EEB 5409 - Evolution (3.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
  or BMEN 5444 (Inactive) (3.0 cr)
• BIOC 5960 - Special Topics in Biochemistry (3.0 cr)
  or BIOC 4960 - Special Topics in Biochemistry (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)
- BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
- BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4794W - Directed Research [WI] (1.0 - 6.0 cr)
- EEB 3408W - Ecology [WI] (3.0 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)
- EBB 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 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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 - Introduction to Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PBIO 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 2016
- 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
BiOL 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or
BiOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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 (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
Chem 2304 - Organic Chemistry II for the Life Sciences (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

College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 B.S. 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

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

A GPA above 2.0 is preferred for the following:
- 2.50 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 B.S. 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)
Take 3 or more credit(s) from the following:
- BIOL 3270 - Introduction To Systems Biology (3.0 cr)
- CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- BIOL 3272 - Applied Biostatistics (3.0 cr)
or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I (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)

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)
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)

Molecular and Cellular Biology
BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 3021 - Biochemistry (3.0 cr)
or 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 1 or more course(s) from the following:

Organismal Biology
Take 1 or more course(s) from the following:
- BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- MCB 3301 - Biology of Microorganisms (5.0 cr)
- BIOL 3002 - Plant Biology: Function (2.0 cr)
- BIOL 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)
- BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
- BIOL 2007 - Marine Animal Diversity Laboratory (2.0 cr)

Ecology, Evolution, and Behavior
Take 1 or more course(s) from the following:
- BIOL 3807 - Ecology (4.0 cr)
- BIOL 3811 - Introduction to Animal Behavior (4.0 cr)
- EEB 3407 - Ecology (3.0 cr)
- EEB 3408W - Ecology [WI] (3.0 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
Electives must include 2 laboratory or field courses from the approved list. To count as a lab/field course, directed research must be completed for 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 11 or more credit(s) from the following:

### Laboratory and Field Courses

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 4025W</td>
<td>Laboratory in Biochemistry [WI]</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>BIOC 4125</td>
<td>Laboratory in Molecular Biology and Biotechnology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BIOC 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>BIOC 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>BIOL 3005W</td>
<td>Plant Function Laboratory [WI]</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>BIOL 3007W</td>
<td>Plant, Algal, and Fungal Diversity and Adaptation [WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>BIOL 3807</td>
<td>Ecology</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>BIOL 3811</td>
<td>Introduction to Animal Behavior</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>BIOL 4506</td>
<td>Coral Reef Ecology (Dive Trip)</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>BIOL 4794W</td>
<td>Directed Research [WI]</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>BIOL 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>EEB 3407</td>
<td>Ecology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EEB 3408W</td>
<td>Ecology [WI]</td>
<td>3.0 cr</td>
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<tr>
<td>EEB 3411</td>
<td>Introduction to Animal Behavior</td>
<td>3.0 cr</td>
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<tr>
<td>EEB 3412W</td>
<td>Introduction to Animal Behavior [WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>EEB 4129</td>
<td>Mammalogy</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>EEB 4134</td>
<td>Introduction to Ornithology</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>EEB 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>EEB 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>EEB 5605</td>
<td>Limnology Laboratory</td>
<td>2.0 cr</td>
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<tr>
<td>ENT 5361</td>
<td>Aquatic Insects</td>
<td>4.0 cr</td>
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<tr>
<td>FW 4136</td>
<td>Ichthyology</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>GCD 3485</td>
<td>Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>GCD 4025</td>
<td>Cell Biology, Development &amp; Regeneration Laboratory</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>GCD 4111</td>
<td>Histology: Cell and Tissue Organization</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>GCD 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>GCD 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>GCD 5006</td>
<td>Computer Programming for Cell Biology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>MICB 3301</td>
<td>Biology of Microorganisms</td>
<td>5.0 cr</td>
</tr>
<tr>
<td>MICB 4215</td>
<td>Advanced Laboratory: Microbial Physiology and Diversity</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>MICB 4225W</td>
<td>Advanced Laboratory: Microbial Genetics [WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>MICB 4235</td>
<td>Advanced Laboratory: Virology, Immunology, and Microbial Genetics</td>
<td>3.0 cr</td>
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<tr>
<td>MICB 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 7.0 cr</td>
</tr>
<tr>
<td>MICB 4994</td>
<td>Directed Research</td>
<td>1.0 - 7.0 cr</td>
</tr>
<tr>
<td>NSCI 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>NSCI 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
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<tr>
<td>PBIO 4321</td>
<td>Minnesota Flora</td>
<td>3.0 cr</td>
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<td>PBIO 4404</td>
<td>Developmental Plant Anatomy</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>PBIO 4511</td>
<td>Flowering Plant Diversity</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>PBIO 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>PBIO 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
</tr>
<tr>
<td>BIOL 3211</td>
<td>Physiology of Humans and Other Animals</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BIOL 2005</td>
<td>Animal Diversity Laboratory</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>BIOL 3211</td>
<td>Physiology of Humans and Other Animals</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BIOL 2007</td>
<td>Marine Animal Diversity Laboratory</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>EEB 3409</td>
<td>Evolution</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EEB 5409</td>
<td>Evolution</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>

### Additional Electives

Take 0 - 8 credit(s) from the following:

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 3960</td>
<td>Research Topics in Biochemistry</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>BIOC 4025W</td>
<td>Laboratory in Biochemistry [WI]</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>BIOC 4125</td>
<td>Laboratory in Molecular Biology and Biotechnology</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BIOC 4185</td>
<td>Laboratory in Molecular Genetics</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>BIOC 4225</td>
<td>Laboratory in NMR Techniques</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>BIOC 4325</td>
<td>Laboratory in Mass Spectrometry</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>BIOC 4331</td>
<td>Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems</td>
<td>4.0 cr</td>
</tr>
</tbody>
</table>

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Information current as of December 01, 2016
• 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 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 5353 - Microbial Biochemistry and Biotechnology: Small Molecules (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 5531 - Macromolecular Crystallography I: Fundamentals and Techniques (1.0 cr)
• BIOC 5532 - Macromolecular Crystallography II: Techniques and Applications (1.0 cr)
• BIOC 5560 - Special Topics in Biochemistry (3.0 cr)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 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 (3.0 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 3807 - Ecology (4.0 cr)
• BIOL 3811 - Introduction to Animal Behavior (4.0 cr)
• BIOL 4121 - Microbial Ecology and Applied Microbiology (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 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 in Biology (1.0 - 4.0 cr)
• BMEN 2501 - Cellular and Molecular Biology for Biomedical Engineers [BIOL] (4.0 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 4413 - Nucleic Acids (3.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (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] (3.0 cr)
• EEB 3409 - Evolution (3.0 cr)
• EEB 3411 - Introduction to Animal Behavior (3.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 4068 - Plant Physiological Ecology (3.0 cr)
• EEB 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 4330W - 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 5053 - Ecology: Theory and Concepts (4.0 cr)
- EEB 5066 - Plant Physiological Ecology (3.0 cr)
- EEB 5221 - Molecular Evolution (3.0 cr)
- EEB 5322 - Evolution and Animal Cognition (3.0 cr)
- EEB 5605 - Limnology Laboratory (2.0 cr)
- EEB 5609 - Ecosystem Ecology (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)
- GCC 3001 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 3006 - Grand Challenge: Climate Change - Myths, Mysteries, and Uncertainties [ENV] (3.0 cr)
- GCC 5003 - Grand Challenge: Seeking Solutions to Global Health Issues [GP] (3.0 cr)
- GCD 4108 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- GCD 4385 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (3.0 cr)
- GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
- GCD 4034 - Molecular Genetics (3.0 cr)
- GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
- GCD 4143 - Endocrinology (3.0 cr)
- GCD 4151 - Molecular Biology of Cancer (3.0 cr)
- GCD 4161 - Developmental Biology (3.0 cr)
- GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
- GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- GCC 4993 - Directed Studies (1.0 - 6.0 cr)
- GCC 4994 - Directed Research (1.0 - 6.0 cr)
- GCD 5036 - Molecular Cell Biology (3.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
- MATH 5447 - Theoretical Neuroscience (4.0 cr)
- MICB 4111 - Microbial Physiology and Diversity (3.0 cr)
- MICB 4131 - Immunology (3.0 cr)
- MICB 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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)
- 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 - 6.0 cr)
- MICB 4993 - Directed Studies (1.0 - 6.0 cr)
- MICB 4994 - Directed Research (1.0 - 6.0 cr)
- MATH 5031W - Perception [WI] (3.0 cr)
- NSC 5040 - Brain Networks: From Connectivity to Dynamics (4.0 cr)
- NSC 5202 - Theoretical Neuroscience: Systems and Information Processing (3.0 cr)
- NSC 5203 - Basic and Clinical Vision Science (3.0 cr)
- NSC 5461 - Cellular and Molecular Neuroscience (4.0 cr)
- NSC 5462 - Neuroscience Principles of Drug Abuse (2.0 cr)
- NSC 5540 - Survey of Biomedical Neuroscience (2.0 cr)
- NSC 5551 - Itasca Cell and Molecular Neurobiology Laboratory (4.0 cr)
- NSC 5561 - Systems Neuroscience (4.0 cr)
- NSC 5661W - Behavioral Neuroscience [WI] (3.0 cr)
- NSC 5667 - Neurobiology of Disease (2.0 - 3.0 cr)
- NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 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)
- NSCI 4151 - 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)
•PBIO 4321 - Minnesota Flora (3.0 cr)
•PBIO 4404 - Developmental Plant Anatomy (3.0 cr)
•PBIO 4511 - Flowering Plant Diversity (3.0 cr)
•PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
•PBIO 4601 - Topics in Plant Biochemistry (3.0 cr)
•PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
•PBIO 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
•PBIO 4993 - Directed Studies (1.0 - 7.0 cr)
•PBIO 4994 - Directed Research (1.0 - 6.0 cr)
•PBIO 5109 - Current Questions in Fungal Biology (2.0 cr)
•PBIO 5301 - Plant Genomics (3.0 cr)
•PBIO 5412 - Plant Physiology and Development (3.0 cr)
•PBIO 5516 - Plant Cell Biology (3.0 cr)
•PBIO 5601 - Topics in Plant Biochemistry (3.0 cr)
•PBIO 5960 - Special Topics (1.0 - 3.0 cr)
•PHCL 4001 - Mechanisms of Drug Action (2.0 cr)
•PHYS 3022 - Introduction to Cosmology (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)
•VPM 4131 - Immunology (3.0 cr)
•BIOL 3002 - Plant Biology: Function (2.0 cr)
•CHEM 2302 - Organic Chemistry II (3.0 cr)
or CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
•GCC 3007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
or GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
•GCC 3011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
or GCC 5011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
•GCC 3012 - Grand Challenge: Structural Violence & Medication Experience [DSJ] (3.0 cr)
or GCC 5012 - Grand Challenge: Structural Violence & Medication Experience [DSJ] (3.0 cr)
•MICB 3301 - Biology of Microorganisms (6.0 cr)
or MICB 3303 - Biology of Microorganisms (3.0 cr)
•EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
or ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
•BIOC 5444 - Muscle (3.0 cr)
or BMEN 5444 (Inactive)(3.0 cr)
or PHSL 5444 - Muscle (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)
•BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
•BIOL 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] (3.0 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 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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 - Introduction to 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)
• PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PBIO 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 2016
- 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)
- Applied 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
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- 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 1010 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
- BIOL 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
Electives

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

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

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

- BIOC 2331 - Chemical Mechanisms in Biology (3.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
- BIOL 2005 - Animal Diversity Laboratory (2.0 cr)
- BIOL 2007 - Marine Animal Diversity Laboratory (2.0 cr)
- BIOL 2012 - General Zoology (4.0 cr)
- BIOL 2022 - General Botany (3.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 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)
- BIOL 3002 - Plant Biology: Function (2.0 cr)
- BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
- BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 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 (3.0 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 3807 - Ecology (4.0 cr)
- BIOL 3811 - Introduction to Animal Behavior (4.0 cr)
- BIOL 3960H - Communicating in the Biological Sciences (1.0 cr)
- BIOL 4003 - Genetics (3.0 cr)
- BIOL 4004 - Cell Biology (3.0 cr)
- BIOL 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
- BIOL 4201 - Teaching in the Biology Laboratory (1.0 cr)
- BIOL 4586 - Coral Reef Ecology (Dive Trip) (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 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 5950 - Special Topics in Biology (1.0 - 4.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
- EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
- EEB 3407 - Ecology (3.0 cr)
- EEB 3408W - Ecology [WI] (3.0 cr)
- EEB 3409 - Evolution (3.0 cr)
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
- EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
- EEB 4134 - Introduction to Ornithology (4.0 cr)
- EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
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<tr>
<td>MICB 4794W</td>
<td>Directed Research: Writing Intensive [WI]</td>
<td>1.0 - 7.0 cr</td>
</tr>
<tr>
<td>MICB 4993</td>
<td>Directed Studies</td>
<td>1.0 - 6.0 cr</td>
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<td>MICB 4994</td>
<td>Directed Research</td>
<td>1.0 - 7.0 cr</td>
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<tr>
<td>NSCI 3001W</td>
<td>Neuroscience and Society [CIV, WI]</td>
<td>4.0 cr</td>
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<td>NSCI 3101</td>
<td>Introduction to Neurobiology I: Molecular, Cellular, and Systems</td>
<td>3.0 cr</td>
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<td>NSCI 3102W</td>
<td>Introduction to Neurobiology II: Perception and Behavior [WI]</td>
<td>3.0 cr</td>
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<td>NSCI 4100</td>
<td>Development of the Nervous System: Cellular and Molecular Mechanisms</td>
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<td>NSCI 4105</td>
<td>Neurobiology Laboratory I</td>
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<tr>
<td>NSCI 4151</td>
<td>Advanced Topics in Neuroscience</td>
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<td>NSCI 4167</td>
<td>Neuroscience in the Community</td>
<td>1.0 - 3.0 cr</td>
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<td>1.0 - 6.0 cr</td>
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<td>1.0 - 6.0 cr</td>
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<td>1.0 - 7.0 cr</td>
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<td>NSCI 4994</td>
<td>Directed Research</td>
<td>1.0 - 6.0 cr</td>
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<tr>
<td>PBIO 4321</td>
<td>Minnesota Flora</td>
<td>3.0 cr</td>
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<td>PBIO 4404</td>
<td>Developmental Plant Anatomy</td>
<td>3.0 cr</td>
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<tr>
<td>PBIO 4511</td>
<td>Flowering Plant Diversity</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>PBIO 4516W</td>
<td>Plant Cell Biology: Writing Intensive [WI]</td>
<td>3.0 cr</td>
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• PBIO 4601 - Topics in Plant Biochemistry (3.0 cr)
• PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PBIO 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• PBIO 4993 - Directed Studies (1.0 - 7.0 cr)
• PBIO 4994 - Directed Research (1.0 - 6.0 cr)
• PBIO 5109 - Current Questions in Fungal Biology (2.0 cr)
• PBIO 5301 - Plant Genomics (3.0 cr)
• PBIO 5412 - Plant Physiology and Development (3.0 cr)
• PBIO 5514 - Plant Molecular Genetics and Development (3.0 cr)
• PBIO 5516 - Plant Cell Biology (3.0 cr)
• PBIO 5601 - Topics in Plant Biochemistry (3.0 cr)
• PBIO 5960 - Special Topics (1.0 - 3.0 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 2016
- 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 B.S. 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
Freshmen students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
  or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)

Take 3 or more credit(s) from the following:
- BIOL 3270 - Introduction To Systems Biology (3.0 cr)
• CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (3.0 cr)
  or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence

CHEM 1081 - Chemistry for the Life Sciences I (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 CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
  or EEB 4611 - Biogeochemical Processes (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)
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)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 3021 - Biochemistry (3.0 cr)
  or BIOL 3022 - Biochemistry for Life Scientists (3.0 cr)
  or BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)

Ecology, Evolution, and Biodiversity

Ecology, Evolution, and Behavior

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

Evolution

• EEB 3409 - Evolution (3.0 cr)
  or EEB 5409 - Evolution (3.0 cr)
• EEB 3407 - Ecology (3.0 cr)
  or EEB 3408W - Ecology [WI] (3.0 cr)
  or BIOL 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 BIOL 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)
  or BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
BIOL 2007 - Marine Animal Diversity Laboratory (2.0 cr)

• Plant Biology

  • BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
  • BIOL 3002 - Plant Biology: Function (2.0 cr)
  • BIOL 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:
• BIOL 3807 - Ecology (4.0 cr)
• BIOL 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)

Upper Division EEB
Take 1 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 4129 - Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• EEB 4330W - Animal Communication [WI] (3.0 cr)
• EEB 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)
• 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 - 6.0 cr)
• MICB 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [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 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• BIOC 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 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] (3.0 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 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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 - Introduction to 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)
• PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PBIO 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
Twin Cities Campus
Genetics, Cell Biology, and Development B.S.
Genetics, Cell Biology, and Development TCBS
College of Biological Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 B.S. 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
Freshmen students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)
Take 3 or more credit(s) from the following:
• BIOL 3270 - Introduction to Systems Biology (3.0 cr)
• CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (3.0 cr)
or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence

CHEM 1081 - Chemistry for the Life Sciences I (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 CHEM 2304 - Organic Chemistry II for the Life Sciences (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)
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)

Molecular and Cellular Biology

BIOC 3021 - Biochemistry (3.0 cr)
or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOC 4003 - Genetics (3.0 cr)
BIOC 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 1 or more course(s) from the following:

Organismal Biology

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

• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• BIOL 3002 - Plant Biology: Function (2.0 cr)
• BIOL 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)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 2007 - Marine Animal Diversity Laboratory (2.0 cr)

• Ecology, Evolution, and Behavior

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

• BIOL 3807 - Ecology (4.0 cr)
• BIOL 3811 - Introduction to Animal Behavior (4.0 cr)
• EEB 3407 - Ecology (3.0 cr)
• EEB 3408W - Ecology [WI] (3.0 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, 4171, and PBIO 5514 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 4994 - Directed Research (1.0 - 6.0 cr)
- GCD 5005 - Computer Programming for Cell Biology (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)

**Genetics**

Take 0 - 3 course(s) from the following:
- EEB 5042 - Quantitative Genetics (3.0 cr)
- GCD 4034 - Molecular Genetics (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)
- PBIO 5514 - Plant Molecular Genetics and Development (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 - Introduction to Neurobiology I: Molecular, Cellular, and Systems (3.0 cr)
- VPM 4131 - Immunology (3.0 cr)
- PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
or PBIO 5516 - Plant Cell Biology (3.0 cr)

**Developmental Biology**

Take 0 - 3 course(s) from the following:
- GCD 4151 - Molecular Biology of Cancer (3.0 cr)
- GCD 4161 - Developmental Biology (3.0 cr)
- GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
- NSCI 4100 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
- PBIO 5514 - Plant Molecular Genetics and Development (3.0 cr)

**Additional Electives**

Take 0 - 7 credit(s) from the following:
- BIOC 3960 - Research Topics in Biochemistry (1.0 cr)
- 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 3002 - Plant Biology: Function (2.0 cr)
- BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
- BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 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 (3.0 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)
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<td>BIOL 3807</td>
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<td>BIOL 4121</td>
<td>Microbial Ecology and Applied Microbiology (3.0 cr)</td>
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<tr>
<td>GCC 3007</td>
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or GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
• MICB 3301 - Biology of Microorganisms (5.0 cr)
• MICB 3303 - Biology of Microorganisms (3.0 cr)
• BIOC 5444 - Muscle (3.0 cr)
• PHSL 5444 - Muscle (3.0 cr)
• EEB 3409 - Evolution (3.0 cr)
• EEB 5409 - Evolution (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:

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<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>BIOC 4025W</td>
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<td>BIOC 4793W</td>
<td>Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)</td>
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<td>Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)</td>
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<td>BIOL 3005W</td>
<td>Plant Function Laboratory [WI] (2.0 cr)</td>
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<td>BIOL 3007W</td>
<td>Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)</td>
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<tr>
<td>BIOL 4321W</td>
<td>Deconstructing Research: Writing about Biological Research for Non-scientists [WI] (2.0 cr)</td>
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<td>BIOL 4794W</td>
<td>Directed Research [WI] (1.0 - 6.0 cr)</td>
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<td>Introduction to Animal Behavior [WI] (4.0 cr)</td>
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<td>Animal Communication [WI] (3.0 cr)</td>
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<td>EEB 4609W</td>
<td>Ecosystem Ecology [ENV, WI] (3.0 cr)</td>
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<td>Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)</td>
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<td>GCD 4005W</td>
<td>Cell Biology - Writing Intensive [WI] (4.0 cr)</td>
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<td>GCD 4794W</td>
<td>Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)</td>
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<tr>
<td>MICB 4141W</td>
<td>Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 cr)</td>
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<td>MICB 4161W</td>
<td>Eukaryotic Microbiology [WI] (3.0 cr)</td>
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<tr>
<td>MICB 4225W</td>
<td>Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)</td>
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<tr>
<td>MICB 4793W</td>
<td>Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)</td>
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<td>PBIO 4794W</td>
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Marine Biology Minor

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.

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

Required prerequisites
Prerequisites
Talk with advisor about equivalent courses.

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 1010 - 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)

Chemistry
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles 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 (2.0 cr)
or FW 4136 - Ichthyology (4.0 cr)

Marine Biology Elective Courses
Students will select marine biology-related courses such as the ones listed below. Approval of elective courses will be at the discretion of the Director of Undergraduate Studies.
Take 6 or more credit(s) from the following:

- **BIOL 4590** - Coral Reef Ecology (2.0 cr)
- **BIOL 4596** - Coral Reef Ecology (Dive Trip) (2.0 cr)
- **CFAN 3502** - Bahamas--Tropical Marine Biology and Shark Ecology (2.0 cr)
- **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)
- **EEB 4611** - Biogeochemical Processes (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 2016
- 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
Freshmen students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)

Take 3 or more credit(s) from the following:
• BIOL 3270 - Introduction To Systems Biology (3.0 cr)
• CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (3.0 cr)
  or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence
CHEM 1081 - Chemistry for the Life Sciences I (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)

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)
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)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)
  or BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
  or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
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 5353 - Microbial Biochemistry and Biotechnology: Small Molecules (3.0 cr)
• BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
• BIOL 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
• MICB 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 5353 - Microbial Biochemistry and Biotechnology: Small Molecules (3.0 cr)
• BIOC 5361 - Microbial Genomics and Bioinformatics (3.0 cr)
• BIOC 5527 - Introduction to Modern Structural Biology (4.0 cr)
• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 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 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• CHEM 4412 - Chemical Biology of Enzymes (3.0 cr)
• CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
• EEB 4611 - Biogeochemical Processes (3.0 cr)
• EEB 5042 - Quantitative Genetics (3.0 cr)
• EEB 5221 - Molecular Evolution (3.0 cr)
• GCC 5003 - Grand Challenge: Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GCD 4034 - Molecular Genetics (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 Cell Biology (3.0 cr)
• GCD 5036 - Molecular Cell Biology (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• NSCI 5300 - Biological Microscopy & Digital Imaging (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)
• GCC 3007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
• GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
• EEB 3409 - Evolution (3.0 cr)
• GCC 3007W - Grand Challenge: Toward Conquest of Disease [WI] (2.0 cr)
• GCC 5007W - Grand Challenge: Toward Conquest of Disease [WI] (2.0 cr)
• EEB 3408W - Ecology [WI] (3.0 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)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• EBB 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 3408 - Evolution (3.0 cr)
• GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
• GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
• GCC 5007W - Grand Challenge: Toward Conquest of Disease [WI] (2.0 cr)
• GCC 5007W - Grand Challenge: Toward Conquest of Disease [WI] (2.0 cr)
• GCD 4005W - Cell Biology - Writing Intensive [WI] (4.0 cr)
• GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• EEB 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• MICB 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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)

Upper Division Writing Intensive within the Major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• EBB 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 3408 - Evolution (3.0 cr)
• EEB 3408 - Evolution (3.0 cr)
• NSCI 3102W - Introduction to 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)
• PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PBIO 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
Twin Cities Campus
Microbiology Minor

Microbiology Minor
College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 38 to 46

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

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

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

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

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

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

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

Biology
BIOL 1009 - General Biology [BIOL] (4.0 cr)
BIOL 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
  or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
  or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)

Chemistry
CHEM 1081 - Chemistry for the Life Sciences I (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1086 - Chemistry for the Life Sciences II Laboratory (1.0 cr)
CHEM 2081 - Chemistry for the Life Sciences III (3.0 cr)
CHEM 2085 - Chemistry for the Life Sciences III Laboratory (2.0 cr)
  or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)

Admission Courses
BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
MICB 3301 - Biology of Microorganisms (5.0 cr)
BIOC 3021 - Biochemistry (3.0 cr)
  or BIOC 3022 - Biochemistry for Life Scientists (3.0 cr)
  or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)

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Information current as of December 01, 2016
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
Coursework needs to be completed at the University of Minnesota-Twin Cities.

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:
- MICB 4111 - Microbial Physiology and Diversity (3.0 cr)
- BIOL 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 75 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 B.S. 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
Freshmen students are usually admitted to pre-major status before admission to this major

A GPA above 2.0 is preferred for the following:
- 2.50 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)

Take 3 or more credit(s) from the following:
- BIOL 3270 - Introduction To Systems Biology (3.0 cr)
- CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• BIOL 3272 - Applied Biostatistics (3.0 cr)
or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

**Track 1: Preferred CBS Chemistry Sequence**

CHEM 1081 - Chemistry for the Life Sciences I (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
CHEM 2304 - Organic Chemistry II for the Life Sciences (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)
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)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 3021 - Biochemistry (3.0 cr)
or
BIOL 3022 - Biochemistry for Life Scientists (3.0 cr)
or
BIOL 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOL 4003 - Genetics (3.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)

Additional Core

Take 1 or more course(s) from the following:
• BIOL 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)
• BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
• BIOL 2007 - Marine 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)
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)

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 (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)
• 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)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 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] (3.0 cr)
• EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
• EEB 4390W - 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 4114W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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 3012W - Introduction to 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)
• PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PBIO 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 2016
- 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.

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)

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 2016
• 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
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 (3.0 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
- MICB 4111 - Microbial Physiology and Diversity (3.0 cr)
- BIOL 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)
Plant biologists study all aspects of biology as they pertain to plants or fungi, and make important contributions to analyzing and preserving biodiversity worldwide. They work to enhance the nutritional value of crops, as well as their resistance to disease, pests, and drought while working to reduce the need for pesticides, fertilizer, and irrigation.

Current faculty research interests include genomics, gene expression, chromosome structure, plant growth substances, signal transduction, plant responses to stress, the plant cytoskeleton and cell morphogenesis, metabolic activities during development, cellular structure and ultrastructure of vascular and nonvascular plants, aquatic biology, lichenology, molecular evolution and systematics, fungal and plant interactions, biological rhythms, and fungal diversity.

Plant biology majors follow one of two tracks. One track fits the needs of students who are primarily interested in environmental biology, evolution, or other aspects of whole organisms; the other track is appropriate for students interested in molecular, cellular, and development biology. All plant biology 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.

**Program Delivery**

This program is available:

* via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

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

A GPA above 2.0 is preferred for the following:

* 2.50 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](http://www.admissions.umn.edu).

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](http://www.registrar.umn.edu/courses/). Required courses for the major or minor in which a 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
  - BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
  - BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
  - BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)
  - BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
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)

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

- BIOL 3270 - Introduction To Systems Biology (3.0 cr)
- CSCI 1133 - 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 2241 - Mathematical Modeling of Biological Systems (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- BIOL 3272 - Applied Biostatistics (3.0 cr)

or BIOL 5272 - Applied Biostatistics (3.0 cr)

Chemistry

Track 1: Preferred CBS Chemistry Sequence

CHEM 1081 - Chemistry for the Life Sciences I (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)

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)

Molecular and Cellular Biology

BIOL 3020 - Molecular Biology and Society [TS] (3.0 cr)
BIOL 3021 - Biochemistry (3.0 cr)

or 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

EEB 3407 - Ecology (3.0 cr)

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

or BIOL 3807 - Ecology (4.0 cr)

EEB 3409 - Evolution (3.0 cr)

or EEB 5409 - Evolution (3.0 cr)

BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)

or BIOL 3002 - Plant Biology: Function (2.0 cr)

with BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)

Plant Biology Major-specific Courses

Plant Biology Major Electives

At least one course must be completed from Group A and Group B. Courses from Group C may be used if additional credits are needed to reach 14 total credits. Other Group C electives can be approved via the petition process. Recommendations must be made by the director of Undergraduate Studies or a faculty mentor on the petition form, then submitted to CBS Student Services.

Take 14 or more credit(s) from the following:

Group A: Organismal Biology

- Take 1 or more course(s) from the following:
  - FNRM 3104 - Forest Ecology (4.0 cr)
  - EEB 4068 - Plant Physiological Ecology (3.0 cr)
  - PBIO 4321 - Minnesota Flora (3.0 cr)
  - PBIO 4511 - Flowering Plant Diversity (3.0 cr)
  - PLPA 5203 - Introduction to Fungal Biology (3.0 cr)

Group B: Cell Biology and Genetics

-
Take 1 or more course(s) from the following:
- BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
- PBIO 4601 - Topics in Plant Biochemistry (3.0 cr)
- PBIO 5301 - Plant Genomics (3.0 cr)
- PBIO 4412 - Plant Physiology and Development (3.0 cr)
- PBIO 5514 - Plant Molecular Genetics and Development (3.0 cr)
- PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
  or PBIO 5516 - Plant Cell Biology (3.0 cr)

• Group C: Other Electives
Take 0 - 8 credit(s) from the following:
- BIOL 3270 - Introduction To Systems Biology (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
- CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 3003 - Introduction to Computing in Biology (3.0 cr)
- GCC 3001 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 3006 - Grand Challenge: Climate Change - Myths, Mysteries, and Uncertainties [ENV] (3.0 cr)
- GCC 5003 - Grand Challenge: Seeking Solutions to Global Health Issues [GP] (3.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- NSCI 5300 - Biological Microscopy & Digital Imaging (3.0 cr)
- 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)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
- BIOL 3272 - Applied Biostatistics (3.0 cr)
  or BIOL 5272 - Applied Biostatistics (3.0 cr)
- GCC 3007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
  or GCC 5007 - Grand Challenge: Toward Conquest of Disease [ENV] (3.0 cr)
- GCC 3011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
  or GCC 5011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
- GCC 3012 - Grand Challenge: Structural Violence & Medication Experience [DSJ] (3.0 cr)
  or GCC 5012 - Grand Challenge: Structural Violence & Medication Experience [DSJ] (3.0 cr)
- PBIO 4412 - Plant Physiology and Development (3.0 cr)
  or PBIO 5412 - Plant Physiology and Development (3.0 cr)

• Take 0 - 8 credit(s) from the following:
- BIOC 4xxx
- BIOC 5xxx
- BIOL 4xxx
- BIOL 5xxx
- EEB 4xxx
- EEB 5xxx
- GCD 4xxx
- GCD 5xxx
- MICB 4xxx
- MICB 5xxx
- NSC 4xxx
- NSC 5xxx
- NSCI 4xxx
- NSCI 5xxx
- PBIO 4xxx
- PBIO 5xxx

Lab/Field Requirement
- Any course 3xxx or higher offered at the Lake Itasca Biological Station and Laboratories may be used to fulfill the lab/field requirement.
- BIOL 3005W or BIOL 3007W may be used for the lab/field requirement if not used in the general plant biology area.
- Courses that are listed in both major electives group A or B AND the lab/field requirement can count in both areas.
- Students may use a maximum of 7 credits of directed research toward a CBS degree.
- Take 3 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)
- BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
- BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- CHEM 2311 - Organic Lab (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)
- BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
- BIOL 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] (3.0 cr)
- EEB 3412W - Introduction to Animal Behavior [WI] (4.0 cr)
- EEB 4308W - Animal Communication [WI] (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- EEB 4793W - 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 4111W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 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 - 6.0 cr)
- NSCI 3010W - Neuroscience and Society [CIV, WI] (4.0 cr)
- NSCI 3102W - Introduction to Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- NSCI 3102W - Introduction to Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
- PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PBIO 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 2016
• 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)
or
BIOL 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or
BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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 (PBIO 4994/4794W) and/or directed studies (PBIO 4993/4793W) may be used. Take 10 or more credit(s) from the following:

• BIOL 2022 - General Botany (3.0 cr)
• BIOL 3002 - Plant Biology: Function (2.0 cr)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 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)
• PBIO 4321 - Minnesota Flora (3.0 cr)
• PBIO 4511 - Flowering Plant Diversity (3.0 cr)
• PBIO 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
• PBIO 4601 - Topics in Plant Biochemistry (3.0 cr)
• PBIO 4993 - Directed Studies (1.0 - 7.0 cr)
• PBIO 4994 - Directed Research (1.0 - 6.0 cr)
• PBIO 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
• PBIO 4794W - Directed Research: Writing Intensive [WI] (1.0 - 6.0 cr)
• PBIO 5301 - Plant Genomics (3.0 cr)
• BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
• PBIO 5514 - Plant Molecular Genetics and Development (3.0 cr)
• PBIO 5516 - Plant Cell Biology (3.0 cr)
• PBIO 5960 - Special Topics (1.0 - 3.0 cr)
• PLPA 5203 - Introduction to Fungal Biology (3.0 cr)
• PBIO 4412 - Plant Physiology and Development (3.0 cr)
  or PBIO 5412 - Plant Physiology and Development (3.0 cr)
Twin Cities Campus
University Honors Program

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year
Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php

- Two honors courses
- Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)
- Two other Honors Experiences
- Two other Honors Experiences (courses or non-course experiences)

Sophomore Year
Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.

- Two honors courses
- Two honors courses (totalling at least six credits)
- Two other Honors Experiences
- Two other Honors Experiences (courses or non-course experiences)

Junior Year
Students engage in research, scholarship, or creative activity with a faculty mentor— an important step toward the development of a project for the honors thesis— while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.

- One honors course
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
Accounting Certificate
CCE Certificate Programs
College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- 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 5281 - Special Topics in Financial Reporting (2.0 cr)
or ACCT 5310 - International Accounting (2.0 cr)
or IDSC 4411 - Accounting Information Systems and IT Governance (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 - Information Systems for Business Processes and Management (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 - Introduction to Operations Management (3.0 cr)
or MM 4102 - Manufacturing Operations (3.0 cr)
Twin Cities Campus

Applied Business Certificate

CCE Certificate Programs

College of Continuing Education

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2016
• 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. 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.

Managing the professional practice
Managing in health systems organizations
Managing for sustainability, innovation, and quality
Self-designed focus

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

Managing the Professional Practice

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)
Managing for Sustainability, Innovation and Quality
ABUS 4041 - Dynamics of Leadership (3.0 cr)
ABUS 3301 - Introduction to Quality Management (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)

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

Managing in Health Systems Organizations
HSM 4561 - Health Care Administration and Management (3.0 cr)
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4541 - Health Care Finance (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)

Self-Designed
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.

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

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 4707 - Financial Management for the Professional Practice (3.0 cr)
    or ABUS 4709 - Managing the Professional Practice I: Business Design (3.0 cr)
    or ABUS 4711 - Managing the Professional Practice II: Operations (3.0 cr)
    or ABUS 4901 - Special Topics in Applied Business (3.0 cr)
    or HSM 3521 - Health Care Delivery Systems (3.0 cr)
    or HSM 4541 - Health Care Finance (3.0 cr)
Twin Cities Campus

Construction Management B.A.Sc.
CCE Applied Professional Studies
College of Continuing Education

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 85 to 88
• 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
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)
Physics
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
or PHYS 1107 - Introductory Physics Online I (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 3001 - Introduction to Construction (3.0 cr)
Technical Writing
ABUS 4023W - Communicating for Results [WI] (3.0 cr)
or WRIT 3001 - Introduction to Technical Writing and Communication (3.0 cr)
or WRIT 3152W - Writing on Issues of Science and Technology [WI] (4.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
or PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

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

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

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

Major Core Courses
Student must take CMgt 4196: Construction Management Internship 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 (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 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 and 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 BBE 4416 - Building Testing and Diagnostics (2.0 cr)
or BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
or CEGE 3501 - 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 and Mapping (2.0 cr)
CEGE 4201 - 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 - 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 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
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
BBE 4413 - Systems Approach to Residential Construction (4.0 cr)
BBE 4414 - Advanced Residential Building Science (4.0 cr)
BBE 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 3024 - Facility Programming and Design (2.0 cr)

Required Courses
ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
CMGT 4211 - Facility Cost Accounting and Finance (2.0 cr)
CMGT 4213 - Facility Operations and Maintenance Intensive (3.0 cr)
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
CMGT 4542 - Building Energy Systems (3.0 cr)
CMGT 4562 - Building Envelope Design and Construction (2.0 cr)

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 BBE 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
CCE Certificate Programs
College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 18
- 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 3001 - Introduction to Construction (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 (2.0 cr)
**Twin Cities Campus**

**Construction Management Minor**

*CCE Applied Professional Studies*

**College of Continuing Education**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 18

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 3001 - Introduction to Construction (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 (2.0 cr)

**Facility Management**

**Required Courses**

- CMGT 3024 - Facility Programming and Design (2.0 cr)
- CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
- CMGT 4022 - Construction Estimating (3.0 cr)
- CMGT 4211 - Facility Cost Accounting and Finance (2.0 cr)
- CMGT 4213 - Facility Operations and Maintenance Intensive (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 (2.0 cr)
Twin Cities Campus

Dakota Language Teaching Certificate

CCE Certificate Programs
College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- 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

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
- DAKO 3126 - Dakota Language for the Classroom (3.0 cr)
- or AMIN 3141 - American Indian Language Planning (3.0 cr)
- or AMIN 3143 - Language in American Indian Culture and Society (3.0 cr)
Twin Cities Campus
Facility Management Certificate
CCE Certificate Programs
College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 18
- 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 3024 - Facility Programming and Design (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)
CMGT 4211 - Facility Cost Accounting and Finance (2.0 cr)
CMGT 4213 - Facility Operations and Maintenance Intensive (3.0 cr)
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
CMGT 4861 - Construction Management Capstone (2.0 cr)
Twin Cities Campus
Health Services Management B.A.Sc.
CCE Applied Professional Studies
College of Continuing Education

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 80 to 81
- Degree: Bachelor of Applied Science

Health care continues to be one of the largest areas of growth in hiring in the US. 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 has two track options. The Leadership and Management track may be customized with technical electives in areas such as health and wellness, long-term care administration, private practice management, health informatics, or interpreting. The Service Provider, Addiction Studies track prepares students to become a Licensed Alcohol and Drug Counselor (LADC) in Minnesota through requisite coursework as well as practicum experiences in the College of Continuing Education (CCE) Addiction Studies program. An applied internship experience is required for both tracks. 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 CCE's 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:
- 2.50 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 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
STAT 3011 - Introduction to Statistical Analysis [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 SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (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 3301 - Introduction to Quality Management (3.0 cr)
ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
ABUS 4041 - Dynamics of Leadership (3.0 cr)
HINF 5430 - Health Informatics I (3.0 cr)
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4531 - Human Resources in Health Care Settings (3.0 cr)
HSM 4541 - Health Care Finance (3.0 cr)
HSM 4561 - Health Care Administration and Management (3.0 cr)
HSM 4591 - Health Care Law, Safety, 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)

Major Electives
Consult your adviser for other 3xxx or 4xxx electives in business and/or health care that are not on this list but may also be approved.
PUBH 7xxx electives (open to undergrads) fulfill MN requirements for licensure as a long-term care administrator. The 4 TRIN courses can count toward an 18-cr Certificate in Interpreting. One of the following psychology courses is strongly recommended for all students: MGMT 4002-Managerial Psychology (4 cr) OR PSY 1001-Introduction to Psychology (4 cr).
Take 24 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 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)
• 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)
• 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)
• ADDS 5011 - Foundations in Addiction Studies (2.0 cr)
• ADDS 5071 - Foundations of Co-occurring Disorders (2.0 cr)
• AHS 3101 - The New Health Professions Team (2.0 cr)
• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• ANTH 4075 - Cultural Histories of Healing [SOCS, GP] (3.0 cr)
• APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
• CMGT 4211 - Facility Cost Accounting and Finance (2.0 cr)
• CSPH 3001 - Introduction to Integrative Healing (3.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 5890 - Economics of the Health-Care System (3.0 cr)
- FSCN 5601 - Management of Eating Disorders (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (4.0 cr)
- GERO 5110 - Biology of Aging (3.0 cr)
- GERO 5115 - Introduction to Geriatrics (2.0 cr)
- GERO 5125 - Gerontology Service Learning (3.0 cr)
- HINF 5431 - Health Informatics II (3.0 cr)
- HINF 5501 - US Health Care System: Information Challenges in Clinical Care (1.0 cr)
- HINF 5502 - Programming Essentials Python 3 (1.0 cr)
- HINF 5510 - Business Communication [WI] (3.0 cr)
- HINF 5533W - Business Communication [WI] (3.0 cr)
- HINF 4002 - Managerial Psychology (4.0 cr)
- HINF 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
- MLSP 5011W - Professional Issues in the Health Care Community [WI] (2.0 cr)
- OLPD 3330 - Global Identity: Connecting Your International Experience to Your Future (1.0 cr)
- PA 3003 - Nonprofit and Public Financial Management (3.0 cr)
- PA 4101 - Nonprofit Management and Governance (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 1001 - Introduction to Psychology [SOCS] (4.0 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 3601 - Maternal and Child Health Global Public Health Issues (2.0 cr)
- PUBH 6535 - Managerial Accounting for Health Services (3.0 cr)
- PUBH 7580 - Organizational Management in Long Term Care (1.0 cr)
- PUBH 7581 - Gerontology and Services for Long Term Care Residents (2.0 - 4.0 cr)
- PUBH 7582 - Practicum in Long-Term Care Administration (4.0 cr)
- PUBH 7584 - Health Care and Medical Needs (1.0 cr)
- PUBH 7587 - Regulatory Management in Long-Term Care (1.0 cr)
- PUBH 7588 - Information Uses in Long-Term Care (2.0 cr)
- SOC 3511 - World Population Problems [GP] (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 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- INET 3065 - Computer Security for the Business Professional (3.0 cr)
- ABUS 3065 - Computer Security for the Business Professional (3.0 cr)

Career Prep
- ABUS 3051 - Career Skills in the Professional Environment for Juniors and Seniors (2.0 cr)
- CFAN 3201 - Career and Internship Preparation (1.0 cr)
- ICP 3201 - Career and Internship Preparation (1.0 cr)
- CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- GLBT 3456W - Sexuality and Culture [DSJ, 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)
- OLPD 3306 - Leadership Minor: Field Experience (3.0 cr)
- PA 3971 - Leadership Minor: Field Experience (3.0 cr)
- PA 3961 - Leadership, You, and Your Community (3.0 cr)
- OLPD 3302 - Leadership, You, and Your Community (3.0 cr)

Writing Requirements
Students are required to take one upper-division Writing Intensive course within the major. Required ABUS 4013W counts for that UD
WI. If the other UD WI requirement is not satisfied within the core requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements. Either ABus 4023W-Communicating for Results (3 cr), OR WRIT 3405W-Humanistic Healthcare & Communication (3 cr) is strongly recommended for the other UD WI.

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

- ABUS 4022W - Management in Organizations [WI] (3.0 cr)
- ABUS 4023W - Communicating for Results [WI] (3.0 cr)
- ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
- APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (4.0 cr)
- HMED 3001W - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
- HMED 3002W - Health Care in History II [HIS, WI] (3.0 cr)
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- MGMT 4170W - New Business Feasibility and Planning [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)
- CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Health Services Management Certificate
CCE Applied Professional Studies
College of Continuing Education

Program Type: Undergraduate credit certificate
Requirements for this program are current for Fall 2016
Required credits to graduate with this degree: 21

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:
• 2.50 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 8 credits of the transfer coursework may be used to satisfy requirements for this certificate.

Required Courses
Prereq for ABus 3301 is introductory statistics, and for HSM 4541, knowledge of basic accounting and Microsoft Excel.

ABUS 3301 - Introduction to Quality Management (3.0 cr)
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4531 - Human Resources in Health Care Settings (3.0 cr)
HSM 4541 - Health Care Finance (3.0 cr)
HSM 4561 - Health Care Administration and Management (3.0 cr)
HSM 4591 - Health Care Law, Safety, and Ethics (3.0 cr)
HSM 4861 - Leadership and Business Planning in Health Care: Capstone (3.0 cr)
Twin Cities Campus
Health Services Management Minor
CCE Applied Professional Studies
College of Continuing Education

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• Required credits in this minor: 21 to 29

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:
• 2.50 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
Required Courses
Recommended prereq for ABUS 3301 is basic statistics (such as STAT 3011, PSY 3801, SOC 3811, or SCO 2550, all 4 credits), and for HSM 4541, Microsoft Excel and basic accounting (such as ACCT 2050, 4 credits). These courses, if needed, could bring the required credit total up to 29.
ABUS 3301 - Introduction to Quality Management (3.0 cr)
HSM 3521 - Health Care Delivery Systems (3.0 cr)
HSM 4531 - Human Resources in Health Care Settings (3.0 cr)
HSM 4541 - Health Care Finance (3.0 cr)
HSM 4561 - Health Care Administration and Management (3.0 cr)
HSM 4591 - Health Care Law, Safety, and Ethics (3.0 cr)
HSM 4861 - Leadership and Business Planning in Health Care: Capstone (3.0 cr)
Twin Cities Campus
Information Technology Infrastructure B.A.Sc.
CCE Applied Professional Studies
College of Continuing Education

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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)

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)

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 2050 - 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 (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] (4.0 cr)
or WRIT 3257 - Technical and Professional Presentations (3.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Core Courses
CSCI 4061 - Introduction to Operating Systems (4.0 cr)
CSCI 4211 - Introduction to Computer Networks (3.0 cr)
INET 4031 - System Administration (4.0 cr)
NET 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)

Business/Communication Courses
Management
ABUS 4022W - Management in Organizations [WI] (3.0 cr)
or HSM 4561 - Health Care Administration and Management (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
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)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [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.

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 - Big Data Implementation (3.0 cr)

Data Management Technical Electives
Take 3 - 5 credit(s) from the following:
• INET 4007 - Security II: Cloud Security (4.0 cr)
• INET 4011 - Networking I: Network Administration (4.0 cr)
• INET 4021 - Network Programming (4.0 cr)
• INET 4032 - Systems I: Storage (4.0 cr)
• INET 4041 - Networking II: Emerging Technologies (4.0 cr)
• INET 4061 - Data Science I: Fundamentals (3.0 cr)
• INET 4083 - System Analysis and Design (2.0 cr)
• INET 4121 - DevOps II: Development Strategies (4.0 cr)
• INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (3.0 cr)
• INET 4710 - Big Data Architecture (3.0 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 - Big Data Architecture (3.0 cr)

Data Science Technical Electives
Take 3 - 5 credit(s) from the following:
• INET 4007 - Security II: Cloud Security (4.0 cr)
• INET 4011 - Networking I: Network Administration (4.0 cr)
• INET 4021 - Network Programming (4.0 cr)
• INET 4032 - Systems I: Storage (4.0 cr)
• INET 4041 - Networking II: Emerging Technologies (4.0 cr)
• INET 4083 - System Analysis and Design (2.0 cr)
• INET 4121 - DevOps II: Development Strategies (4.0 cr)
• INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (3.0 cr)
• INET 4709 - Data Management I: Fundamentals (3.0 cr)
• INET 4711 - Big Data Implementation (3.0 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 CSci 4211-Introduction to Computer Networks, and two more courses.

- INET 4021 - 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: Cloud Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)
- INET 4083 - System Analysis and Design (2.0 cr)
- INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Big Data Architecture (3.0 cr)
- INET 4711 - Big Data Implementation (3.0 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 CSci 4211-Introduction to Computer Networks, 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: Cloud Security (4.0 cr)
- INET 4021 - Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)
- INET 4083 - System Analysis and Design (2.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Big Data Architecture (3.0 cr)
- INET 4711 - Big Data Implementation (3.0 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: Cloud Security (4.0 cr)
- INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (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 - Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)
- INET 4083 - System Analysis and Design (2.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Big Data Architecture (3.0 cr)
- INET 4711 - Big Data Implementation (3.0 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 - System Analysis and Design (2.0 cr)

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

- INET 4007 - Security II: Cloud Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - Network Programming (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Big Data Architecture (3.0 cr)
- INET 4711 - Big Data Implementation (3.0 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: Cloud Security (4.0 cr)
- INET 4011 - Networking I: Network Administration (4.0 cr)
- INET 4021 - Network Programming (4.0 cr)
- INET 4032 - Systems I: Storage (4.0 cr)
- INET 4041 - Networking II: Emerging Technologies (4.0 cr)
- INET 4061 - Data Science I: Fundamentals (3.0 cr)
- INET 4083 - System Analysis and Design (2.0 cr)
- INET 4121 - DevOps II: Development Strategies (4.0 cr)
- INET 4165 - Information Security: Technology, Ethics, Legality, and Standards (3.0 cr)
- INET 4709 - Data Management I: Fundamentals (3.0 cr)
- INET 4710 - Big Data Architecture (3.0 cr)
- INET 4711 - Big Data Implementation (3.0 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

College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- 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)
   - 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)
   - CSCI 4061 Introduction to Operating Systems (4 cr)
   - CSCI 4211 Introduction to Computer Networks (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 40% of transferable, department-approved coursework from other educational institutions toward the certificate.

With approval of the program, up to 5 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.

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 - Big Data Implementation (3.0 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 - Big Data Architecture (3.0 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
- CSCI 4211 - Introduction to Computer Networks (3.0 cr)
- INET 4021 - 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
- CSCI 4211 - Introduction to Computer Networks (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: Cloud 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 - Information Security: Technology, Ethics, Legality, and Standards (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 coursework.

Required Courses
INET 4031 - System Administration (4.0 cr)
INET 4032 - Systems I: Storage (4.0 cr)
INET 4051 - IT Infrastructure Operations (3.0 cr)
INET 4083 - System Analysis and Design (2.0 cr)

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

Electives for Self-Designed Certificate
CSCI 4061 - Introduction to Operating Systems (4.0 cr)
or CSCI 4211 - Introduction to Computer Networks (3.0 cr)
or INET 4007 - Security II: Cloud Security (4.0 cr)
or INET 4011 - Networking I: Network Administration (4.0 cr)
or INET 4021 - Network Programming (4.0 cr)
or INET 4031 - System Administration (4.0 cr)
or INET 4032 - Systems I: Storage (4.0 cr)
or INET 4041 - Networking II: Emerging Technologies (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 - System Analysis and Design (2.0 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 - Information Security: Technology, Ethics, Legality, and Standards (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 - Big Data Architecture (3.0 cr)
or INET 4711 - Big Data Implementation (3.0 cr)
Twin Cities Campus
Inter-College Program B.A.
CCE Individualized Degree and Inter-College Prog
College of Continuing Education

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 66
- Degree: Bachelor of Arts

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

Most students design a degree drawing from two or three departmental areas from the University. Examples include addiction studies and psychology, or Carlson School of Management, manufacturing technology, and 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 an information session, which are held several times each week. Academic advisers provide a detailed introduction to the program and help students begin the planning process. For further information on the Inter-College Program, visit http://www.cce.umn.edu/Inter-College-Program/index.html.

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 adviser.

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.

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Information current as of December 01, 2016
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.

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 PSTL 1461 (Inactive) [CIV] (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 adviser to select the appropriate course.

ICP Program Options

Two Area Cross-College Program
This plan combines courses from two area cross-college programs, such as CSOM and mass communications, or computer science and French.
Complete 20 approved credits of upper division coursework in one area of concentration.
Complete 20 approved credits of upper division coursework in a second area of concentration.
Complete 10 credits of elective upper division coursework.

-OR-

Three Area Cross-College Program
This plan combines courses from three area cross-college programs, such as applied business, communication studies, and psychology, or public health, child psychology, and family social science.
Complete 20 approved credits of upper division coursework in one area of concentration.
Complete 12 approved credits of upper division coursework in a second area of concentration.
Complete 12 approved credits of upper division coursework in a third area of concentration.
Complete 6 credits of elective upper division coursework.

-OR-

Thematic Cross-College Program
A thematic cross-college program, such as aging studies, integrates coursework from several departments—sociology, public health, family social science, and social work. Thematic programs are appropriate only when students’ objectives are clearly focused on one topic that cannot be pursued in a two- or three-area program.
Complete 40 approved upper division credits on a theme with no more than 15 credits in any one department.
Complete 10 credits of elective upper division coursework.
Twin Cities Campus
Inter-College Program B.S.
CCE Individualized Degree and Inter-College Prog
College of Continuing Education

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 52 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 addiction studies and psychology, or Carlson School of Management, manufacturing technology, and 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 an information session, which are held several times each week. 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 www.cce.umn.edu/Inter-College-Program/.

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.

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 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.

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

Social Science
ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
or EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)
or FSOS 1101 - Intimate Relationships [SOCS] (4.0 cr)
or FSOS 1201 - An Interdisciplinary Look at the Family in Multicultural America [DSJ, SOCS] (4.0 cr)
or GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)

Upper Division Health & Wellness Core Requirements
Students must complete a minimum of 31 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)
or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
or KIN 3027 - Human Anatomy for Kinesiology Students (3.0 cr)

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

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

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

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

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

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 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 4561 - Health Care Administration and Management (3.0 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 NURS 4402 - Taking Ethical Action in Health Care [CIV] (1.0 cr)
or PHAR 4200W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
or PHIL 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
or PHIL 3305 - Medical Ethics (4.0 cr)

Complementary/Alternative Healing
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)
or CSPH 5431 - Functional Nutrition: An Expanded View of Nutrition, Chronic Disease, and Optimal Health (2.0 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 - Issues in Health Literacy and Communication (3.0 cr)
or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
or WRIT 3221W - Communication Modes and Methods [WI] (4.0 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.

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
CCE Certificate Programs
College of Continuing Education

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2016
• 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 [SOCS] (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 3011 - 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 [SOCS] (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 3011 - 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 [SOCS] (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
CCE Degree and Credit Programs Administration
College of Continuing Education

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2016
• 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 - History of Airpower and Communication Skills (1.0 cr)
AIR 1205 - Quality Air Force, Group Leadership Problems, and Presentation Techniques (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 4410 - Amphibious Warfare (3.0 cr)
Complete a 3-credit philosophy, rhetoric, or leadership course approved by the Professor of Military/Chair of the Department of Naval Science.

Naval Science--Navy

Naval Science Option

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

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 79 to 83
- Degree: Bachelor of Applied 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
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)

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 (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

Chemistry
- 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)
- 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 3402 - Introduction to Interpersonal Communication (3.0 cr)
or COMM 3605W - Persuasive Speaking and Speech Writing [WI] (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] (4.0 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 (2.0 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 (2.0 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)

Technical Elective Courses
Other related 3xxx or 4xxx courses may be substituted with department approval.
Take 8 or more credit(s) from the following:
• 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 4155 - 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 4561 - Health Care Administration and Management (3.0 cr)
• MM 3305 - 3D Printing and Additive Manufacturing (3.0 cr)
• MM 4550 - Special Topics in Manufacturing (1.0 cr)
• MT 3111 - Elements of Microelectronic Manufacturing (3.0 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)
• 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)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (4.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
Twin Cities Campus
Manufacturing Operations Management Certificate
CCE Certificate Programs
College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- 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 (2.0 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 (2.0 cr)
- or MM 4501 - Capstone (3.0 cr)
- or MM 4596 - Internship (1.0 - 4.0 cr)
Twin Cities Campus

Manufacturing Operations Management Minor
CCE Applied Professional Studies
College of Continuing Education

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• 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 (2.0 cr)
• MM 4045 - Regulated Industry Compliance (3.0 cr)
• MM 4201 - Quality Engineering and Process Improvement (3.0 cr)
• MM 4311 - Sustainable Lean Manufacturing (2.0 cr)
• MM 4596 - Internship (1.0 - 4.0 cr)
Twin Cities Campus
Multidisciplinary Studies B.A.
CCE Individualized Degrees
College of Continuing Education

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 50
• Degree: Bachelor of Arts

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

For further information on multidisciplinary studies, visit http://www.cce.umn.edu/Multidisciplinary-Studies/index.html.

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.
CCE Individualized Degrees
College of Continuing Education

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 http://www.cce.umn.edu/Multidisciplinary-Studies/index.html.

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

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

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

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

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

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

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

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

At a timely point after admission, students must enroll in MDS 3001W: Intro to Multidisciplinary Studies, a 3-credit course, to develop a written proposal with a rationale for the degree plan. When the instructor has determined that the proposal is complete, it is submitted to a review committee for approval. At that point, the student achieves major status.

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

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

**Program Requirements**
In applicable departmental areas, successful completion of the following courses will count toward the 50 credits: CHEM 2302, CSCI 2021, DHA 2463, FW 2001, PSY 2801.

All major courses must be completed with a letter grade of C- or better.

**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

CCE Certificate Programs

College of Continuing Education

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- 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 Education 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
CCE Certificate Programs
College of Continuing Education

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2016
• 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 3109 - Anishinaabe Literature (3.0 cr)
or AMIN 3141 - American Indian Language Planning (3.0 cr)
or AMIN 3149 - Language in American Indian Culture and Society (3.0 cr)
**Twin Cities Campus**  
**Translation Minor**  
*CCE Applied Professional Studies*  
**College of Continuing Education**

- Program Type: Undergraduate free-standing minor  
- Requirements for this program are current for Fall 2016  
- 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 Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
- Required credits to graduate with this degree: 14 to 44
- This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year
Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php
**Two honors courses**
Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)
**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

Sophomore Year
Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.
**Two honors courses**
Two honors courses (totalling at least six credits)
**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

Junior Year
Students engage in research, scholarship, or creative activity with a faculty mentor—an important step toward the development of a project for the honors thesis—while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.
**One honors course**
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
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 2016
- 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)

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Information current as of December 01, 2016
**Twin Cities Campus**

Applied Psychology in Educational and Community Settings Minor

**Educational Psychology**
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 18

The applied psychology in educational and community settings (APECS) minor is an 18-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 either a research or community service practicum course. 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**
- EPSY 3301 - Introduction to Educational Psychology [SOCS] (3.0 cr)
- EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
- EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
- EPSY 3302 - Introduction to Communication Skills for Educational and Community Settings (3.0 cr)

**APECS Practicum**
Complete 3 credits of practicum.
- EPSY 3133 - Practicum: Service Learning, Psychology of Multiculturalism in Education (1.0 - 3.0 cr)
or EPSY 3303 - Educational Psychology Undergraduate Research Practicum (3.0 cr)

**APECS Electives**
- EPSY 3119 - Learning, Cognition, and Assessment (3.0 cr)
or EPSY 5613 - Foundations of Special Education I [DSJ] (3.0 cr)
- EPSY 5616 - Classroom Management and Behavior Analytic Problem Solving (3.0 cr)
- EPSY 5461 - Cross-Cultural Counseling (3.0 cr)
- EPSY 5401 - Counseling Procedures (3.0 cr)
- EPSY 5432 - Foundations of Individual/Organizational Career Development (3.0 cr)
- EPSY 5221 - Principles of Educational and Psychological Measurement (3.0 cr)
- YOST 3234 - Youth Agencies, Organizations, and Youth Service Systems (3.0 cr)
- YOST 3235 - Community Building, Civic Engagement, and Civic Youthwork (4.0 cr)
- YOST 4315 - Youthwork in Schools (4.0 cr)
or YOST 4317 - Youthwork in Contested Spaces (3.0 cr)
Twin Cities Campus
Autism Spectrum Disorders Certificate
Educational Psychology
College of Education and Human Development

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 13
• Degree: Autism Spectrum Disorders Certificate

New student applications to the Autism Spectrum Disorders Certificate are not being accepted as the curriculum is being revised.

The certificate program in autism spectrum disorders (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 abilities, and language and communication skills.

This 13-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 Univ of MN Twin Cities campus.

All applicants must submit the following materials:
- Two letters of recommendation on letterhead stationery from individuals who can address the applicant's abilities to work in a professional context with this population
- Typed goal statement (no more than one page)
- Completed application
- Transcripts from all post-secondary institutions attended or currently attending, except the University of Minnesota. For students not currently in a University of Minnesota program, transcripts must be received from the issuing school in a sealed and stamped envelope.
- Foreign transcript evaluation (if applicable) from an accredited reviewer (ECS http://www.ece.org/ or WES http://www.wes.org/students/index.asp).

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 moment 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 (13 credits).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPSY 5616</td>
<td>Classroom Management and Behavior Analytic Problem Solving</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EPSY 5631</td>
<td>Module 1: Introduction to Augmentative and Alternative Communication</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>EPSY 5632</td>
<td>Module 2: Evidence-based Methods for AAC Assessment and Intervention</td>
<td>2.0 cr</td>
</tr>
<tr>
<td>EPSY 5633</td>
<td>Module 3: Speech-generating Devices and High-Tech AAC</td>
<td>1.0 cr</td>
</tr>
<tr>
<td>EPSY 5661</td>
<td>Introduction to Autism Spectrum Disorder</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>EPSY 5663</td>
<td>Assessment and Intervention for Individuals with Autism Spectrum Disorders</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>
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 2016
- 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)
  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 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 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
OLPD 1301W - Personal Leadership in the University [WI] (3.0 cr)
or
PA 1951W - 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 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)
or
CI 1871 - Computer Literacy and Problem Solving (4.0 cr)
or
IDSC 3001 - Information Systems for Business Processes and Management (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 options 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)
or
OLPD 4420 - Practicum in Nonprofit Organizations (2.0 cr)
or
OLPD 3306 - Leadership Minor: Field Experience (3.0 cr)
or
PA 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)
or
OLPD 3380 - Developing Intercultural Competence (3.0 cr)
or
OLPD 3828 - Diversity in the Workplace (3.0 cr)
or
OLPD 4318 - Advanced Project Management (3.0 cr)
or
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 4155 - 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)
• FSOS 4153 - Family Financial Counseling (3.0 cr)
• HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
• HSM 4561 - Health Care Administration and Management (3.0 cr)
• JOUR 4272 - Interactive Advertising (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 - Management of Innovation and Change (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 - Introduction to Operations Management (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)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Career and Technical Education B.S.
Work and Human Resource Education
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 90
- Degree: Bachelor of Science

The major in career and technical education (CTE) is a professional development degree program offering professional preparation in the field. Students may select one of several program options.

The licensure program option prepares students for Minnesota teaching licensure for grades 9-12 in one of eight career and technical education fields:

* communication technology careers
* construction careers
* creative design careers
* early childhood careers
* hospitality service careers
* manufacturing careers
* medical careers
* transportation careers

The general career and technical education option prepares students to teach in technical and community college CTE programs.

For more information on program and licensure requirements, contact the program adviser at 612-625-7250.

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.

Currently, Career and Technical Education major is not accepting applications.

Students must have completed at least 30 semester credits or sufficient verified and approved technical work experience to be awarded 30 credits toward the degree. Applicants to the postsecondary general career and technical education option must have a minimum 2.00 GPA.

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
Currently, Career and Technical Education major is not accepting applications.

A minimum 2.00 overall GPA with no grade lower than C- is required for major courses with the following designators: BIE, EDHD, HRD, and WHRE. A minimum grade of C- is also required for general psychology. A minimum 2.50 overall GPA is required for recommendation for Minnesota teaching licensure.

Electives to complete the 120 credits must be selected in consultation with an adviser.
Foundation Courses

MGMT 3033W - Business Communication [WI] (3.0 cr)
or
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
CI 5452 - Reading in the Content Areas for Initial Licensure Candidates (1.0 - 2.0 cr)
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
PSTL 1281 (Inactive) [SOCS] (4.0 cr)
or
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
MATH 1001 - Excursions in Mathematics [MATH] (3.0 cr)
or
MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)

Pedagogical Studies

OLPD 1496 - Supervised Career and Technical Education Teaching (4.0 cr)
EPSY 5001 - Learning, Cognition, and Assessment (3.0 cr)
OLPD 1801 - Introduction to Career and Technical Education Teaching (2.0 cr)
OLPD 3808 - Foundations of Student and Trainee Assessment (2.0 cr)
or
OLPD 5808 - Student and Trainee Assessment (2.0 cr)
OLPD 3829 - Foundations of Course Development for Business and Industry (2.0 cr)
or
OLPD 5829 - Course Development for Business and Industry (2.0 cr)
OLPD 3861 - Foundations of Instructional Methods for Business and Industry (2.0 cr)
or
OLPD 5861 - Instructional Methods for Business and Industry (2.0 cr)
OLPD 3801 - Foundations of Philosophy and Practice of Career and Technical Education (2.0 cr)
or
OLPD 5806 - Philosophy and Practice of Career and Technical Education (2.0 cr)

Career Content Proficiency

Up to 32 credits may be completed before enrollment in the CTE program. Credits may include occupational experience, formal technical college coursework, military or industrial experience, or workshops related to the field. Credits will be evaluated for transfer to BIE 3151. The remainder of credits in this requirement must be completed after enrollment.

Complete a total of 44 credits from the following or adviser approved:

OLPD 3451 - Technical Development: Advanced (1.0 - 32.0 cr)
OLPD 5454 (Inactive) (1.0 - 12.0 cr)
OLPD 5496 (Inactive) (1.0 - 10.0 cr)
OLPD 5493 (Inactive) (1.0 - 4.0 cr)

Additional Requirements

OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
OLPD 3005 - Fundamentals of Alcohol and Drug Abuse for Teacher Education (1.0 cr)
or
OLPD 3003 - Fundamentals of Alcohol and Drug Abuse (2.0 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)

Program Sub-plans

A sub-plan is not required for this program.
Twin Cities Campus
Coaching Certificate
Kinesiology, School of
College of Education and Human Development

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 17
- 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 certificate in coaching provides a coordinated, meaningful, and functional framework from which future coaches can launch their coaching careers. Offered by the School of Kinesiology (KIN) in the College of Education & Human Development (CEHD), the program is designed to exceed requirements for high school coaches.

The program offers an integrated series of courses that prepares undergraduate or graduate students to:
- Develop proficiency in sport specific technical, tactical, and competency.
- Understand athletic injury prevention and care.
- Design sport-specific practice sessions that are safe and age-appropriate for athletes of varied abilities.
- Properly apply the training principles of specificity, frequency, duration, and intensity specific to their sport.
- Organize and integrate physical, social, and mental skills development into sports programs.
- Develop a coaching philosophy.
- Discuss the role and responsibility of coaching in society.
- Articulate and understand basic legal liability and risk management issues in coaching.
- Understand the governing bodies of sport competition within the local administrative units.

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 is open to all University students. A Coaching Program Application Form must be submitted. Students must also maintain a 2.50 GPA in courses submitted for the completion of the coaching 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
Students must maintain a 2.50 GPA in courses submitted for the completion of the coaching certificate.

Certificate Courses
Students completing the certificate are required to take the courses listed below.
Current 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 4697 - Student Coaching and Seminar (3.0 cr)
Organization and Management
KIN 3143 - Organization and Administration of Sport (3.0 cr)
or KIN 5725 - Organization and Management of Physical Education and Sport (3.0 cr)
or SMGT 3143 - Organization and Management of Sport (3.0 cr)

**Sport Psychology-Sociology**
One course required. If taking KIN 5720, it should be a 3 credit offering approved in consultation with the program coordinator.
KIN 3136 - Mental Skills Training for Sport (3.0 cr)
or KIN 5136 - Psychology of Coaching (3.0 cr)
or KIN 5371 - Sport and Society (3.0 cr)
or KIN 5375 - Youth Sport Science (3.0 cr)
or KIN 5723 - Psychology of Sport Injury and Rehabilitation (3.0 cr)
or KIN 5720 - Special Topics in Kinesiology (2.0 - 4.0 cr)

**Coaching Theory**
One coaching theory course required. Please note: If coaching specialization course is not listed, alternatives can be made with the coaching program director.
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)
Twin Cities Campus
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 2016
- Required credits in this minor: 23 to 24

The coaching minor offers an in-depth study of the theoretical and practical nature of coaching through a planned and integrated series of courses. Completion of the coaching minor also will qualify the student for the University of Minnesota Coaching Certificate. Additional program offerings also include a certificate in coaching.

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.

Minor Requirements
Admission is open to all University students. A Coaching Program Application Form must be submitted. Students must also maintain a 2.50 GPA in courses submitted for the completion of the coaching minor.

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

KIN 3027 - Human Anatomy for Kinesiology Students (3.0 cr)
Current CPR and AED Certification through national certification agency

Sport Training
The following 3 courses are required to complete the minor.
KIN 3114 - Prevention and Care of Athletic Injuries (3.0 cr)
KIN 4641 - Training Theory & Analytics I for Sport Performance (3.0 cr)
KIN 4697 - Student Coaching and Seminar (3.0 cr)

Organization and Management
KIN 3143 - Organization and Administration of Sport (3.0 cr)
or SMGT 3143 - Organization and Management of Sport (3.0 cr)
or KIN 5725 - Organization and Management of Physical Education and Sport (3.0 cr)

Electives
In addition to the courses below, any program-related course approved by the coaching program coordinator can be applied toward this minor.

Sport Psychology - Sociology
If taking KIN 5720, it should be a 3 credit offering approved in consultation with the program coordinator.
Take 1 or more course(s) from the following:
- KIN 3136 - Mental Skills Training for Sport (3.0 cr)
- KIN 5136 - Psychology of Coaching (3.0 cr)
- KIN 5371 - Sport and Society (3.0 cr)
- KIN 5375 - Youth Sport Science (3.0 cr)
- KIN 5723 - Psychology of Sport Injury and Rehabilitation (3.0 cr)
- KIN 5720 - Special Topics in Kinesiology (2.0 - 4.0 cr)

Sport Physical Sciences
If taking KIN 4520 or 5720, it should be a 3 credit offering approved in consultation with the coaching program coordinator.
Take 1 or more course(s) from the following:

- KIN 4385 - Exercise Physiology (4.0 cr)
- KIN 4520 - Current Topics in Kinesiology (2.0 - 4.0 cr)
- KIN 4741 - Training Theory & Analytics 2 for Sport Performance (3.0 cr)
- KIN 5841 - Elite Performance and Environmental Considerations (3.0 cr)
- KIN 5142 - Applied Nutrition for Sport Performance and Optimal Health (3.0 cr)
- KIN 5641 - Scientific Theory and Application of Training and Conditioning in Sport (3.0 cr)
- KIN 5720 - Special Topics in Kinesiology (2.0 - 4.0 cr)

**Coaching Theory**

Please note: If coaching specialization course is not listed, other options may be accepted in consultation the coaching program coordinator.

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

- KIN 3168 - Soccer Coaching Theory and Skill Development (2.0 cr)
- KIN 3169 - Volleyball Coaching Theory and Skill Development (2.0 cr)
- KIN 3171 - Baseball Coaching Theory and Skill Development (2.0 cr)
- KIN 3172 - Basketball Coaching Theory and Skill Development (2.0 cr)
- KIN 3173 - Football Coaching Theory and Skill Development (2.0 cr)
- KIN 3178 - Tennis Coaching Theory and Skill Development (2.0 cr)
- KIN 3179 - Track and Field Coaching Theory and Skill Development (2.0 cr)
Twin Cities Campus
Early Childhood Education: Foundations B.S.
Institute of Child Development
College of Education and Human Development

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 67 to 73
• Degree: Bachelor of Science

The undergraduate program in Early Childhood Education: Foundations, prepares students to work with young children and their families. The curriculum includes an extensive core of liberal education courses that are central to early childhood teaching and child development.

The program prepares graduates to work in non-licensure educational settings (including daycare centers or youth community programs), to pursue advanced degrees, or to work in other settings where a strong liberal education base is useful.

In addition, the undergraduate degree program prepares students for entry into the Master of Education (MEd)/initial licensure programs in Early Childhood Education, Early Childhood Special Education, or Elementary Education.

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 preferred.
- Completion of all prerequisite coursework listed below for University of Minnesota students. External transfer students entering the University of Minnesota Twin Cities must complete all transfer coursework listed below; however, an external transfer student who does not have the equivalent of CPSY 2301 but who does have a general psychology transfer course may complete CPSY 2301 in their first semester.

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

Required prerequisites
Child Psychology
CPSY 2301 - Introduction to Child Psychology (4.0 cr)
  or CPSY 3301 - Introduction to Child Psychology for Social Sciences (4.0 cr)

Mathematics
CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
  or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
  or MATH 1051 - Precalculus I [MATH] (3.0 cr)
  or MATH 1151 - Precalculus II [MATH] (3.0 cr)

Earth Science
AST 1001 - Exploring the Universe [PHYS, ENV] (4.0 cr)
  or ESCL 1001 - Earth and Its Environments [PHYS, ENV] (4.0 cr)
  or ESCL 1101 - Introduction to Geology [ENV] (3.0 cr)

Human Geography
GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (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] (4.0 cr)
or GLOS 3701W - Population in an Interacting World [SOCS, GP, 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

Foundation Courses
CPSY 4331 - Social and Personality Development (3.0 cr)
CPSY 4343 - Cognitive Development (3.0 cr)
CPSY 4993 - Directed Experiences in Early Childhood Education (3.0 cr)
CI 5307 - Technology for Teaching and Learning (1.5 cr)
OLPD 5009 - Human Relations: Applied Skills for School and Society (1.0 cr)
EPSY 5001 - Learning, Cognition, and Assessment (3.0 cr)

Language and Literacy
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)
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)

Physical Science
PHYS 3071W - Laboratory-Based Physics for Teachers [PHYS, WI] (4.0 cr)
or PHYS 1001W - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)
or Any chemistry with a lab

Major Courses
Students must be admitted to the program before taking these courses. Many of the major courses have an experiential component. CPSY 5281 must be taken for 4 to 6 credits.
CI 3211 - Introduction to Elementary Teaching (3.0 cr)
CI 3212 - Practicum: Elementary Teaching (2.0 cr)
CPSY 5251 - Social and Philosophical Foundations of Early Childhood Education (2.0 cr)
CPSY 5252W - Facilitating Social and Emotional Learning in Early Childhood Education [WI] (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)
CPSY 5281 - Student Teaching in Early Childhood Education (1.0 - 6.0 cr)

Recommended Electives
Recommend KIN 3327, MTHE 3101 and 3102, and CI 3001 to students going on to initial licensure programs in elementary education.

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
- CPSY 5252W - Facilitating Social and Emotional Learning in Early Childhood Education [WI] (3.0 cr)
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 2016
- 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 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

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

#### Foundation Courses
- **CI 5307** - Technology for Teaching and Learning (1.5 cr)
- **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)
- **CI 4121** should be taken for 3 credits.
- **CI 4122** should be taken for 3 credits.
- **CPSY 2301** - Introduction to Child Psychology (4.0 cr)

#### Special Education Block
This block of courses should be taken during the third semester in the major, one year after the introductory block.
- **EPSY 5613** - Foundations of Special Education I [DSJ] (3.0 cr)
  - *with EPSY 5616* - Classroom Management and Behavior Analytic Problem Solving (3.0 cr)
  - *with CI 3283* - Practicum: Special Education K-6 (2.0 cr)

#### Mathematics
- **Mathematics for Elementary Teachers I**
  - **MTHE 3101** - Mathematics and Pedagogy for Elementary Teachers I (3.0 cr)
- **Mathematics for Elementary Teachers II**
  - **MTHE 3102** - Mathematics and Pedagogy for Elementary Teachers II (3.0 cr)

#### Science
- **Physical Science with Lab**
  - **CI 1563** - Physics by Inquiry [PHYS] (4.0 cr)
  - or **PHYS 1001W** - Energy and the Environment [PHYS, ENV, WI] (4.0 cr)
  - or **PHYS 1101W** - Introductory College Physics I [PHYS, WI] (4.0 cr)
  - or **PHYS 1201W** - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
  - or **PHYS 1301W** - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
  - or **PHYS 3071W** - Laboratory-Based Physics for Teachers [PHYS, WI] (4.0 cr)

#### Social Studies
- **Human Geography**
  - **GEOG 1301W** - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
  - or **GEOG 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] (4.0 cr)
  - or **GLOS 3701W** - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)

#### Literacy
- **CI 3401W** - Diversity in Children's Literature [WI] (3.0 cr)

#### Linguistics
- **LING 3001** - Introduction to Linguistics [SOCS] (4.0 cr)
  - or **ENGL 3601** - Analysis of the English Language (4.0 cr)
  - or **CI 3610** - Linguistics for Teachers [SOCS] (3.0 cr)

#### Reading Processes and Development
- **CI 5413** - Foundations of Reading (3.0 cr)
  - *with CI 5414* - Practicum: Working With Developing Readers (2.0 cr)

#### Arts
- **CI 3001** - Engaged Arts Learning in Elementary Classrooms (2.0 cr)
Performing Arts
  CI 1032 - Creating Identities: Learning In and Through the Arts [AH] (4.0 cr)
  or MUED 3011 - Music in Childhood (3.0 cr)

Kinesiology
  KIN 3327 - Teaching Physical Education in the Elementary School (2.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CI 3401W - Diversity in Children's Literature [WI] (3.0 cr)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 54 to 57
- 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, child and human development, social work, 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 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
- or EPSY 1261 - Understanding Data Stories through Visualization & Computing (3.0 cr)
- or STAT 1001 - Introduction to the Ideas of Statistics [MATH] (4.0 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)
- or SW 1001 - Introduction to the World of Social Work: A Global Perspective (3.0 cr)
- or choose a course from one of the following areas: anthropology, child psychology, educational psychology, human development, political science, psychology, social work, or sociology

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 YOST 3325W - Project-Based Writing 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 2101 - Preparation for Working With Families (2.0 cr)
- FSOS 2103 - Family Policy (3.0 cr)
- FSOS 2105 - Methods in Family Research (3.0 cr)
- FSOS 3101 - Personal and Family Finances (3.0 cr)
- FSOS 3102 - Family Systems and Diversity [SOCS, DSJ] (3.0 cr)
- FSOS 3104 - Global and Diverse Families [SOCS, GP] (3.0 cr)
- FSOS 4106 - Family Resource Management (3.0 cr)

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Information current as of December 01, 2016
Professional Core Courses
Take 18 or more credit(s) from the following:
• FSOS 3426 - Alcohol and Drugs: Families and Culture (3.0 cr)
• FSOS 3429 - Counseling Skills Practicum I (3.0 cr)
• FSOS 4101 - Sexuality and Gender in Families and Close Relationships (3.0 cr)
• FSOS 4104W - Family Psychology [WI] (3.0 cr)
• FSOS 4150 - Special Topics in Family Social Science (1.0 - 4.0 cr)
• FSOS 4152 - Gay, Lesbian, and Bisexual 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 4156 - Legal-Economic Controversies in Families (3.0 cr)
• FSOS 5150 - Special Topics in Family Social Science (1.0 - 4.0 cr)
• FSOS 5426 - Alcohol and Drugs: Families and Culture (3.0 cr)
• FSOS 5429 - Counseling Skills Practicum I (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)

Advanced/Applied Skill Course
Students must take FSOS 4294 or FSOS 4296 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)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• FSOS 4104W - Family Psychology [WI] (3.0 cr)
• YOST 3325W - Project-Based Writing 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)
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 2016
- Required credits in this minor: 13 to 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) from the following:

- FSOS 2103 - Family Policy (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 4104W - Family Psychology [WI] (3.0 cr)
- FSOS 4106 - Family Resource Management (3.0 cr)
- FSOS 4152 - Gay, Lesbian, and Bisexual 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)
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 2016
• Required credits in this minor: 15

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)
Take 6 or more credit(s) from the following:
• AFRO 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (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 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
• JWST 3521W - History of the Holocaust [WI] (3.0 cr)
• SOC 3102 - Criminal Behavior and Social Control (3.0 cr)
• SOC 3501 - Sociology of Families [SOCS, DSJ] (3.0 cr)
• SOC 4109 - Domestic Criminal Violence (3.0 cr)
• SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• YOST 4322 - Work with Youth: Families (2.0 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

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 2016
- 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 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 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 OLPD 1301W - Personal Leadership in the University [WI] (3.0 cr)
or PA 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 - Information Systems for Business Processes and Management (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)
• HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
• HRIR 3031 - Staffing and Selection: Strategic and Operational Concerns (2.0 cr)
• HRIR 3041 - The Individual in the Organization (2.0 cr)
• HRIR 3042 - The Individual and Organizational Performance (2.0 cr)
• HRIR 3051 - Compensation: Theory and Practice (2.0 cr)
• HRIR 3071 - Union Organizing and Labor Relations (2.0 cr)
• HRIR 3072 - Collective Bargaining and Dispute Resolution (2.0 cr)
• MGMT 3004 - Business Strategy (3.0 cr)
• MGMT 4002 - Managerial Psychology (4.0 cr)
• PSY 3711 - Psychology in the Workplace (3.0 cr)
• SCO 3001 - Introduction to Operations Management (3.0 cr)

Upper Division Writing Intensive within the Major

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

Take 0 - 1 course(s) from the following:
• 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)
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 2016
- 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)
- OLPD 3305 - Learning About Leadership Through Film and Literature (3.0 cr)
- OLPD 3828 - Diversity in the Workplace (3.0 cr)
- OLPD 4608 - Introduction to International Human Resource Development (3.0 cr)
Twin Cities Campus
Integrated Degree Program B.S.
College of Education & Human Development

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 60 to 66
• 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)

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 (3.0 cr)

IDP Area Requirements

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Information current as of December 01, 2016
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 1301W or PA 1961W or OLPD 1302 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 5633, 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 3143 or KIN 5725 or SMGT 3143

**Coaching (Three Area option)**  
Current CPR and AED Certification through national certification agency  
KIN 3114, KIN 4641, KIN 4697  
Organizational development  
KIN 3143 or KIN 5725 or SMGT 3143

**Early Childhood Education**  
CPSY 2301 or 3301, CPSY 4993, CPSY 5252w, CPSY 5253, CPSY 5254

**Family Social Sciences**  
FSOS 1101 and FSOS 3102

**Family Violence Prevention**  
SW 3702, SW 3703, SW 3701

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

**Leadership**  
Leadership, you, and your community  
OLPD 3302 or PA 3961
Field experience
OLPD 3306 or PA 3971

Leadership for global citizenship
OLPD 4303W or PA 4961W

Outdoor Recreation and Education
REC 2151, REC 3993, REC 4311

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 4334W - Children, Youth in Society [WI] (3.0 cr)
- FSOS 4104W - Family Psychology [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)
- CPSY 5252W - Facilitating Social and Emotional Learning in Early Childhood Education [WI] (3.0 cr)
- OLPD 4303W - Leadership for Global Citizenship [WI] (3.0 cr)
  or PA 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 2016
- 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

- **PSY 1001** - Introduction to Psychology [SOCS] (4.0 cr)
- or **PSY 1001H** - Honors Introduction to Psychology [SOCS] (4.0 cr)
- or **EPSY 1281** - Psychological Science Applied [SOCS] (4.0 cr)

Biology Course with Lab

- **BIOL 1001** - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
- or **BIOL 1001H** - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
- or **BIOL 1009** - General Biology [BIOL] (4.0 cr)
- or **BIOL 1009H** - Honors: General Biology [BIOL] (4.0 cr)
- or **BIOL 1015** - Human Physiology, Technology, and Medical Devices [BIOL, TS] (4.0 cr)
- or **BIOL 2002** - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- or **BIOL 2002H** - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- or **FSCN 2021** - Introductory Microbiology (4.0 cr)

Chemistry Course with Lab

- **CHEM 1015** - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
- **CHEM 1017** - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
- or **CHEM 1061** - Chemical Principles I [PHYS] (3.0 cr)
- **CHEM 1065** - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- or **CHEM 1062** - Chemical Principles II [PHYS] (3.0 cr)
- **CHEM 1066** - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- or **CHEM 1071H** - Honors Chemistry I [PHYS] (3.0 cr)
- **CHEM 1075H** - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- or **CHEM 1072H** - Honors Chemistry II [PHYS] (3.0 cr)
- **CHEM 1076H** - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Physics Course with Lab

- **PHYS 1101W** - Introductory College Physics I [PHYS, WI] (4.0 cr)
- or **PHYS 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)

Introduction to Kinesiology

- **KIN 1871** - Survey of Kinesiology, Recreation, and Sport (3.0 cr)

Human Anatomy

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

General Requirements

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

Program Requirements

Core Requirements

- **KIN 3112** - Introduction to Biomechanics (4.0 cr)
- **KIN 3126W** - Sport and Exercise Psychology [WI] (3.0 cr)
- **KIN 3131W** - History and Philosophy of Sport [WI] (3.0 cr)
- **KIN 3132** - Introduction to Motor Development Across the Lifespan (3.0 cr)
KIN 3135 - Introduction to Motor Learning and Control (3.0 cr)
KIN 3982 - Research Methods in Kinesiology (3.0 cr)
KIN 4385 - Exercise Physiology (4.0 cr)
KIN 3385 - Human Physiology (4.0 cr)
or
PHSL 3051 - Human Physiology (4.0 cr)
SMGT 3501 - Sport in a Diverse Society [SOCS, DSJ] (3.0 cr)
or
SMGT 3501H - Sport in a Diverse Society: Honors [SOCS, DSJ] (3.0 cr)

Physical Activity Course Requirement
Take 5 credits of physical activity, 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 1004 - Diving: Springboard (1.0 cr)
• 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 Dance Technique 1 (1.0 cr)
• DNCE 1002 - Modern Dance Technique 2 (1.0 cr)
• DNCE 1010 - Modern Dance Technique 3 (1.0 - 2.0 cr)
• DNCE 1020 - Modern 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 - T’ai Chi Ch’uan (1.0 cr)
• DNCE 1343 - Hip Hop Movement (1.0 cr)
• DNCE 1345 - Alexander Technique for Movement Artists (2.0 cr)
• DNCE 1347 - Pilates Conditioning (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 3010 - Modern Dance Technique 5 (2.0 cr)
• DNCE 3020 - Modern 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 1038 - Beginning Tennis (1.0 cr)
• PE 1043 - Beginning Horse Riding (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 1056 - Nordic (Cross-Country) Skiing (1.0 cr)
• PE 1057 - Beginning Skiing (1.0 cr)
• PE 1058 - Snowboarding (1.0 cr)
• PE 1059 - Track and Field (1.0 cr)
• PE 1065 - Beginning Tumbling and Gymnastics (1.0 cr)
• PE 1067 - Basketball (1.0 cr)
• PE 1071 - Beginning Cricket (1.0 cr)
• PE 1072 - Soccer (1.0 cr)
• PE 1074 - Beginning Volleyball (1.0 cr)
• PE 1076 - Flag Football (1.0 cr)
• PE 1077 - Lacrosse (1.0 cr)
• PE 1078 - Ultimate Disc (1.0 cr)
• PE 1079 - Rugby (Non-contact) (1.0 cr)
• PE 1082 - Broomball (1.0 cr)
• PE 1129 - Intermediate Handball (1.0 cr)
• PE 1133 - Intermediate Foil Fencing (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. Student 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 3143 - Organization and Administration of 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)

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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 KIN 5002 - Foundations of Human Factors/Ergonomics (3.0 cr)
or KIN 5103 - Developmental/Adapted Physical Education (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 HUMF 5001 - 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
Leadership Minor
Organizational Leadership, Policy and Development
College of Education and Human Development

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 17

The 17-credit Leadership Minor program is interdisciplinary, multidimensional, experiential, and global. Students will explore and experience multiple frameworks of leadership. The program prepares students for real-life leadership experiences, both on campus and in the larger global community by combining social change theories of leadership with authentic community leadership. This minor is a collaborative effort of the College of Education and Human Development's department of Organizational Leadership, Policy, and Development, the Hubert H. Humphrey School of Public Affairs, and the Office for Student Affairs.

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

Admission Requirements
Students officially declare the Leadership Minor in the first weeks of their field experience course (the third core course of the minor) after completing the first two courses of the program with a grade of C- or better.

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

Minor Requirements
Personal Leadership in the University
PA 1961W - Personal Leadership in the University [WI] (3.0 cr)
or OLPD 1301W - Personal Leadership in the University [WI] (3.0 cr)
or OLPD 1302 - Personal Leadership in the University (3.0 cr)
or CFAN 1101 - Dean's Engaged Leaders Seminar (3.0 cr)

Leadership, You and Your Community
PA 3961 - Leadership, You, and Your Community (3.0 cr)
or OLPD 3302 - Leadership, You, and Your Community (3.0 cr)

Field Experience
PA 3971 - Leadership Minor: Field Experience (3.0 cr)
or OLPD 3306 - Leadership Minor: Field Experience (3.0 cr)

Leadership for Global Citizenship
PA 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)
or OLPD 4303W - Leadership for Global Citizenship [WI] (3.0 cr)

Leadership Electives
In consultation with the leadership minor office, take at least 5 additional credits to complete the 17-credit requirement. The following approved elective options form one list composed of courses from colleges across Twin Cities campus.
Take 1 or more course(s) totaling 5 or more credit(s) from the following:
- AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- ABUS 4012 - Strategic Decision Making and Problem Solving (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 4043 - Project Management in Practice (3.0 cr)
- AFEE 2221W - Foundations of Leadership Practice [WI] (3.0 cr)
- AFEE 4221 - Rural Leadership Development (3.0 cr)
- AFRO 3543 - Psychology and the Black American Experience (3.0 cr)
- AFRO 4105 - Ways of Knowing in Africa and the African Diaspora (3.0 cr)
- AHS 3101 - The New Health Professions Team (2.0 cr)
• AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
• AMST 4101 - Gender, Sexuality, and Politics in America [HIS, DSJ] (3.0 cr)
• ANTH 3015W - Biology, Evolution, and cultural Development of Language [SOCS, WI] (3.0 cr)
• ANTH 3041 - Ecological Anthropology (3.0 cr)
• ANTH 3242W - Hero, Savage, or Equal? Representations of NonWestern Peoples in the Movies [WI] (3.0 cr)
• ANTH 4009W - Warfare and Human Evolution [WI] (3.0 cr)
• ANTH 4049 - Religion and Culture (3.0 cr)
• ANTH 4071 - Race, Culture, and Vision (3.0 cr)
• ANTH 5015W - Biology, Evolution, and Cultural Development of Language [SOCS, WI] (3.0 cr)
• ASL 3705 - Cultural and Sociolinguistic Views within the Deaf Community (3.0 cr)
• BA 3000 - Career Skills (1.0 cr)
• BA 4503 - Carlson Ventures Enterprise (2.0 cr)
• BIOL 3209 - Understanding the Evolution-Creationism Controversy [CIV] (3.0 cr)
• CE 5571 - Acala Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
• CHIC 3400 - Topics in Chicano Studies (3.0 cr)
• CHIC 4275 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
• CI 1911 - Ethics, Wealth, and Education in a Democracy (3.0 cr)
• CI 2311W - Introduction to Technology and Ethics in Society [CIV, WI] (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)
• CLA 2005 - Introduction to Liberal Education and Responsible Citizenship (3.0 cr)
• COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
• COMM 1313W - Analysis of Argument [WI] (3.0 cr)
• COMM 3401 - Introduction to Communication Theory (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 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 3605W - Persuasive Speaking and Speech Writing [WI] (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 3645W - How Pictures Persuade [WI] (3.0 cr)
• CSCL 3408 - Electronic Media and Ethnic Minorities—A World View (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)
• CPSY 4996 - Field Study in Child Psychology (1.0 - 4.0 cr)
• CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
• CSCI 5173W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCI 5411 - Avant-Garde Cinema (4.0 cr)
• CSPH 3201 - Introduction to Mindfulness-Based Stress Reduction (2.0 cr)
• CSPH 3211 - Living on Purpose: An Exploration of Self, Purpose, and Community (2.0 cr)
• DES 1111 - Creative Problem Solving (3.0 cr)
• DES 1111H - Honors: Creative Problem Solving (3.0 cr)
• DES 4165 - Design and Globalization [DSJ] (3.0 cr)
• EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
• EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• ENGL 3505 - Community Learning Internships I (3.0 cr)
• ENGL 3506 - Learning Internships II (4.0 cr)
• ENGL 3741 - Literacy and American Cultural Diversity [DSJ] (4.0 cr)
• EPSY 3101 - Creativity and Intelligence: an Introduction (3.0 cr)
• EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
• EPSY 3133 - Practicum: Service Learning, Psychology of Multiculturalism in Education (1.0 - 3.0 cr)
• EPSY 3302 - Introduction to Communication Skills for Educational and Community Settings (3.0 cr)
• EPSY 3303 - Educational Psychology Undergraduate Research Practicum (3.0 cr)
• EPSY 5101 - Intelligence and Creativity (3.0 cr)
• EPSY 5135 - Human Relations Workshop (4.0 cr)
• ESPM 3011W - Ethics in Natural Resources [WI] (3.0 cr)
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
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<tr>
<td>OLPD 3330</td>
<td>Global Identity: Connecting Your International Experience to Your Future</td>
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<td>OLPD 3336</td>
<td>Religion, Ethics, and Educational Policy [CIV]</td>
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<td>OLPD 3640</td>
<td>Introduction to Organization Development</td>
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<tr>
<td>OLPD 3828</td>
<td>Diversity in the Workplace</td>
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<tr>
<td>OLPD 4301</td>
<td>Global Youth Leadership and Community Engagement</td>
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<tr>
<td>OLPD 4318</td>
<td>Advanced Project Management</td>
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<tr>
<td>OLPD 4608</td>
<td>Introduction to International Human Resource Development</td>
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• OLPD 5005 - School and Society (2.0 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 5095 - Problems: Organizational Leadership, Policy, and Development (1.0 - 3.0 cr)
• OLPD 5323 - Women in Leadership (3.0 cr)
• OLPD 5607 - Organization Development (3.0 cr)
• PA 1401 - Public Affairs: Community Organizing Skills for Public Action [CIV] (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 3990 - General Topics in Public Policy (1.0 - 3.0 cr)
• PA 3991 - Independent Study (1.0 - 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 4971 - Directed Study, Leadership Minor (1.0 - 4.0 cr)
• PA 5001 - Intellectual Foundations of Public Action (1.5 cr)
• PA 5490 - Topics in Social Policy (1.0 - 4.0 cr)
• PA 5920 - Skills Workshop (0.5 - 4.0 cr)
• PA 5941 (Inactive) (3.0 cr)
• PHAR 4200W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
• PHIL 1003W - Introduction to Ethics [CIV, WI] (4.0 cr)
• PHIL 1006W - Philosophy and Cultural Diversity [AH, DSJ, WI] (4.0 cr)
• PHIL 3234 - Knowledge and Society (4.0 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)
• PHIL 4326 - Lives Worth Living: Questions of Self, Vocation, and Community [CIV, AH] (4.0 cr)
• PHIL 4350 - Catching Lives Worth Living: Participation in the Growth of a Living-Learning Community (2.0 cr)
• POL 1234 - Citizen U: Building Tomorrow's Citizens Today (3.0 cr)
• POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
• POL 3489W - Citizens, Consumers, and Corporations [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 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
• POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
• POL 3835 - International Relations [SOCS, GP] (3.0 cr)
• POL 4463 - The Cuban Revolution Through the Words of Cuban Revolutionaries [GP] (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 4773W - Advocacy Organizations, Social Movements, and the Politics of Identity [DSJ, 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)
• PSY 3061 - Introduction to Biological Psychology (3.0 cr)
• PSY 3201 - Introduction to Social Psychology (3.0 cr)
• PSY 3633 - Happiness: Integrating Research Across Psychological Sciences (3.0 cr)
• PSY 3711 - Psychology in the Workplace (3.0 cr)
• PSY 3960 - Undergraduate Seminar in Psychology (1.0 - 5.0 cr)
• PUBH 3001 - Personal and Community Health (2.0 cr)
• PUBH 3050 - Practicum in Peer Education I (2.0 cr)
• PUBH 3052 - Practicum in Peer Education II (2.0 cr)
• PUBH 3093 - Directed Study: Public Health (1.0 - 4.0 cr)
• REC 2151 - Outdoor and Camp Leadership (3.0 cr)
• REC 4900 - Special Topics: Contemporary Issues in Leisure Services (1.0 - 12.0 cr)
• RELS 3373 - Religion and Society in Imperial China (3.0 cr)
• RELS 3623 - Religion and the American Culture Wars [HIS] (3.0 cr)
• RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
• RELS 4049 - Religion and Culture (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)
• SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
• SOC 3211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• SOC 3301W - Politics and Society [WI] (3.0 cr)
• SOC 3411W - Organizations and Society [WI] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• SOC 4090 - Topics in Sociology (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 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SOC 4703 - Contemporary American Culture [CIV] (3.0 cr)
• SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)
• SW 3703 - Gender Violence in Global Perspective (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 3500 - Urban Studies Workshop (3.0 cr)
• WRIT 3152W - Writing on Issues of Science and Technology [WI] (4.0 cr)
• WRIT 3244W - Critical Literacies: How Words Change the World [AH, DSJ, WI] (3.0 cr)
• WRIT 3361 - Literature of Social Movements in the United States: 1950 to Present [LITR, CIV] (3.0 cr)
• WRIT 3371W - Technology, Self, and Society [TS, WI] (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 3751W - Seminar: Theory and Practice of Writing Consultancy [WI] (4.0 cr)
• WRIT 4501 - Usability and Human Factors in Technical Communication (3.0 cr)
• WRIT 4562 - International Professional 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)
• YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
• YOST 3235 - Community Building, Civic Engagement, and Civic Youthwork (4.0 cr)
• YOST 4316 - Media and Youth: Learning, Teaching, and Doing (2.0 cr)
Twin Cities Campus
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 2016
- Required credits in this minor: 16

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/oris.

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

Minor Requirements
Student must complete 16 credits from the designated list for the ORE minor.

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

Electives
Other electives may be accepted after consultation with your advisor. Take 4 or more credit(s) from the following:
- REC 4191 - Adventure Recreation, Tourism, and Eco-Tourism (3.0 cr)
- REC 4301 - Wilderness and Adventure Education (4.0 cr)
- REC 3993 - Directed Study in Recreation, Park, and Leisure Studies (1.0 - 9.0 cr)
Twin Cities Campus
Recreation, Park and Leisure Studies B.S.
Kinesiology, School of
College of Education and Human Development

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 62
- Degree: Bachelor of Science

The undergraduate program in Recreation, Park, and Leisure Studies prepares students to assume leadership, supervisory, or beginning administrative responsibilities, and design and deliver leisure services 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 management, social work, youth studies, sports management, outdoor education and tourism.

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

Graduates may find employment in such locations as public park and recreation programs at the municipal, state, or national level, for commercial recreation, outdoor education and natural resources, and outdoor recreation and tourism.

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 1xxx
Take 3 or more credit(s) from the following:

• PE 1xxx

Public Speaking
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 OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [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)
or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)
or PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
or EPSY 1281 - Psychological Science Applied [SOCS] (4.0 cr)

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, Park, and Leisure Studies (4.0 cr)
REC 3541W - Recreation Programming [WI] (3.0 cr)
REC 3551 - Administration and Finance of Leisure Services (4.0 cr)
REC 3601W - Leisure and Human Development [WI] (3.0 cr)
REC 3796 - Senior Internship in Recreation, Park, and Leisure Studies (3.0 - 9.0 cr)
REC 4271 - Community Leisure Services for Persons with Disabilities (3.0 cr)
SMGT 3681 - 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 2151 - Outdoor and Camp Leadership (3.0 cr)
• REC 3321 - Outdoor Recreation 3-Season Skills (3.0 cr)
• REC 3322 - Outdoor Recreation Winter Skills (3.0 cr)
• REC 3993 - Directed Study in Recreation, Park, and Leisure Studies (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)
• 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 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 (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)
• 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 4154 - Families and Aging (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 (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)
• OLPD 1301W - Personal Leadership in the University [WI] (3.0 cr)
  or PA 1961W - Personal Leadership in the University [WI] (3.0 cr)
  or OLPD 3302 - Leadership, You, and Your Community (3.0 cr)
  or PA 3961 - Leadership, You, and Your Community (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 2016
- 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 service learning in social justice organizations, and 6 credits of elective courses.

Core Courses
These courses include 30 hours of service learning in social justice organizations.
SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)
SW 4501 - Senior Seminar in Social Justice (4.0 cr)
SW 2501W - Introduction to Social Justice [DSJ, WI] (4.0 cr)
or SW 1501 - Introduction to Peace Studies (3.0 cr)

Electives
Take 6 or more credit(s) from the following:
• AAS 1101 - Imagining Asian America [SOCS, DSJ] (3.0 cr)
• AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
• AFRO 3100 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3426 - African Americans, Social Policy, and the Welfare State (3.0 cr)
• AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
• AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
  or
• CI 2311W - Introduction to Technology and Ethics in Society [CIV, WI] (3.0 cr)
• EPSY 3132 - Psychology of Multiculturalism in Education [DSJ] (3.0 cr)
• EPSY 3133 - Practicum: Service Learning, Psychology of Multiculturalism in Education (1.0 - 3.0 cr)
• ESPM 3480 - Topics in Natural Resources (1.0 - 4.0 cr)
• FSOS 3100 - Global and Diverse Families [SOCS, GP] (3.0 cr)
• GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 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 3590 - Topics: Social Change, Activism, Law, and Policy Studies (3.0 cr)
• HIST 3877 - Asian American History, 1850-Present [HIS, DSJ] (3.0 cr)
• PHIL 1004W - Introduction to Political Philosophy [AH, CIV, WI] (4.0 cr)
• PHIL 1007 - Introduction to Political Philosophy Practicum (1.0 cr)
• PHIL 3301 - Environmental Ethics [ENV] (4.0 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)
• PHIL 4231 - Philosophy of Language (3.0 cr)
• POL 4210 - Topics in Political Theory (3.0 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 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 4461 - Sociology of Ethnic and Racial Conflict [DSJ] (3.0 cr)
• SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
• SW 3703 - Gender Violence in Global Perspective (3.0 cr)
• TH 5117 - Performance and Social Change (3.0 cr)
• YOST 3101 - Youthwork: Orientations and Approaches (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)
• 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)
• 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)
• CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
  or CHIC 5374 - Migrant Farmworkers in the U.S.: Families, Work, and Advocacy [CIV] (4.0 cr)
• CHIC 1275 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
  or CHIC 3275 - Service Learning in the Chicano/Latino Community [CIV] (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)
• HECU 3571 - Inequality in America: A Political Economy Approach [SOCS] (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)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 54 to 58
- Student teaching and practicum experiences will be conducted at public school sites.
- Degree: Bachelor of Science

The bachelor of science degree program in special education (BS/SE) prepares students as generalists to serve children with frequently occurring (high incidence) disabilities. The program emphasizes the fundamentals of special education, effective intervention strategies, and the problem solving approach to instruction. Graduates of the BS/SE program receive a license as an Academic and Behavioral Strategist (ABS) to teach in the field of special education in grades kindergarten through age 21.

The (BS/SE) program prepares interested students to enter an additional licensure program in one or more specialized fields e.g. Early Childhood-Special Education, Learning Disabilities, Emotional/Behavioral Disorders, Developmental Disabilities, Deaf/Hard of Hearing, in conjunction with an MA/MEd degree within 5 years of graduation.

The BS/SE undergraduate program maintains the integrity of a research-based degree program recognized nationally. The program is specifically designed for developing teachers as researchers by focusing on the latest developments in educational research and supporting the need to make informed, data-based instructional decisions to ensure that children 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

To be eligible to apply, students must have:
At least 30 credits completed or in progress
Completed EPSY 2601

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 (PSTL 1006, Math 1031, or higher). Once admitted to the major, transfer students will be expected to complete EPSY 2601 in their first semester.

The following courses should be completed or in progress at the time of application*:
EPSY 2601
First-year writing
College algebra

*All prerequisites and major courses must be completed A/F unless the course is offered S/N only. BS/SE only students must earn a C- or higher for all required/recommended pre-requisites and for all major coursework. NOTE: For licensure, students must meet minimum performance standards in licensure work (a) B average in all licensure coursework prior to student teaching & (b) minimum of B- in each licensure course

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

Required prerequisites
Admission Requirements
EPSY 2601 - Understanding Differences, Disabilities and the Career of Special Education (4.0 cr)
Required Courses
The following courses must be complete or in progress.
WRIT 1301 - University Writing (4.0 cr)
or WRIT 1401 - Writing and Academic Inquiry (4.0 cr)
CI 1806 - College Algebra through Modeling [MATH] (3.0 cr)
or MATH 1031 - College Algebra and Probability [MATH] (3.0 cr)
or MATH 1051 - Precalculus I [MATH] (3.0 cr)
or MATH 1151 - Precalculus II [MATH] (3.0 cr)
or MATH 1142 - Short Calculus [MATH] (4.0 cr)

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

Program Requirements
Open electives: Students can be advised to take additional coursework to suit their needs/interests. For example, students can study a second language, obtain coaching certification, take part in global experiences, begin work on a second license area (i.e., Elementary Education), or seek a minor course of study including (but not limited to) an EPSY minor.

Foundation Courses
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 2301 - Introduction to Child Psychology (4.0 cr)
or CPSY 3301 - Introduction to Child Psychology for Social Sciences (4.0 cr)

Core Requirements
EPSY 5613 - Foundations of Special Education I [DSJ] (3.0 cr)
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 5611W - Research-based Practices in Academic and Behavior Disabilities [WI] (3.0 cr)
EPSY 5657 - Interventions for Behavioral Problems in School Settings (3.0 cr)
EPSY 5618 - Specialized Interventions for Students With Mild/Moderate Disabilities in Reading & Written Language (3.0 cr)
EPSY 5619W - Specialized Interventions in Mathematics for Students With Mild to Moderate Disabilities [WI] (3.0 cr)
EPSY 5705 - Practicum in ECSE/Elementary Settings (1.0 cr)
EPSY 5614 - Assessment and Due Process in Special Education (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 5605 - Collaborative Practices for the Special Educator (3.0 cr)
EPSY 5704 - Practicum in Middle/Secondary Settings (1.0 cr)
EPSY 5741 - Student Teaching: Academic and Behavioral Strategist (3.0 - 6.0 cr)
EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
EPSY 3701 - Practicum: Field Experience in Special Education (1.0 - 2.0 cr)
or EPSY 5701 - Practicum: Field Experience in Special Education (1.0 - 2.0 cr)
EPSY 3119 - Learning, Cognition, and Assessment (3.0 cr)
or EPSY 5001 - Learning, Cognition, and Assessment (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:
- EPSY 5611W - Research-based Practices in Academic and Behavior Disabilities [WI] (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 2016
- 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

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 17 credits from this group, with the guidance of a an advisor.

PE 1xxx
Take exactly 3 credit(s) from the following:
- PE 1xxx
Public Speaking
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
or OLPD 1461 - Presentations in Work Settings: Business & Marketing Education and Human Resource Development [CIV] (3.0 cr)

Sociology
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)

Education and Human Development Electives
3 credits of education and human development electives (excluding courses with KIN, REC, or SMGT designators). With the guidance of an advisor.

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 (20 credits)
Students must take an additional 20 credits of electives in consultation with the sport management advisor, 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 20 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)
• 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 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)
• ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• CMGT 3001 - Introduction to Construction (3.0 cr)
• COMM 3201 - Introduction to Electronic Media Production (3.0 - 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)
• MKTG 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)
• OLPD 1301W - Personal Leadership in the University [WI] (3.0 cr)
or PA 1961W - Personal Leadership in the University [WI] (3.0 cr)
or OLPD 3302 - Leadership, You, and Your Community (3.0 cr)
or PA 3961 - Leadership, You, and Your Community (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:
- 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 2016
- 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 course 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

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 2016
- 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

LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)

or LING 5001 - Introduction to Linguistics [SOCS] (4.0 cr)

or CI 3610 - Linguistics for Teachers [SOCS] (3.0 cr)

Other Required Courses

CI 3611W - Basics in Teaching English as a Second Language [WI] (4.0 cr)
CI 3613 - Practical Language Learning for International Communication (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 2016
• 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
LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
or LING 5001 - Introduction to Linguistics [SOCS] (4.0 cr)
or CI 3610 - Linguistics for Teachers [SOCS] (3.0 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 - Practical Language Learning for International Communication (3.0 cr)
Twin Cities Campus

University Honors Program

College of Biological Sciences, College of Continuing Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
- Required credits to graduate with this degree: 14 to 44
- This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year

Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php

- Two honors courses
  - Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)
- Two other Honors Experiences
  - Two other Honors Experiences (courses or non-course experiences)

Sophomore Year

Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.

- Two honors courses
  - Two honors courses (totalling at least six credits)
- Two other Honors Experiences
  - Two other Honors Experiences (courses or non-course experiences)

Junior Year

Students engage in research, scholarship, or creative activity with a faculty mentor--an important step toward the development of a project for the honors thesis--while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.

- One honors course
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
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 2016
- 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 B.S. 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.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 (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 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)
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 2111 - Introduction to Public Speaking [CIV] (3.0 cr)
YOST 3325W - Project-Based Writing For Education and Human Development Majors [WI] (4.0 cr)
or OLPD 3324W - Writing in the Workplace for Education and Human Development Majors [WI] (4.0 cr)
or ENGL 3027W - The Essay [WI] (4.0 cr)
or WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Foundation Courses
YOST 2101 - Urban Youth and Youth Issues [DSJ] (4.0 cr)
YOST 2241 - Experiential Learning (4.0 cr)
YOST 3001 - Introduction to History & Philosophy of Youthwork (4.0 cr)
YOST 3002 - Adolescent and Youth Development for Youthworkers (4.0 cr)
YOST 3101 - Youthwork: Orientations and Approaches (4.0 cr)
YOST 4325 - Improving Everyday Youthwork: Practical Program Evaluation (3.0 cr)
or FSOS 2105 - Methods in Family Research (3.0 cr)
or SOC 3801 - Sociological Research Methods [WI] (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 5240, 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)
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 exactly 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 3562W - Technical and Professional Writing [WI] (4.0 cr)
• YOST 4401W - Young People's Spirituality and Youthwork: An Introduction [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 2016
• 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 (3.0 cr)

Youth Studies Electives
Electives to be chosen in consultation with youth studies adviser.
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 2016
- 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 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 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
All major requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C-.

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 - Introduction to Operations Management (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 2201 - Secure & Succeed in Internships (2.0 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)
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 APEC 4103 - World Food Problems [GP] (3.0 cr)
or AGRO 4103 - World Food Problems [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 3411 - Commodity Marketing (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or APEC 4501 - Financial Modeling (3.0 cr)
• Take 2 or more course(s) totaling 6 or more credit(s) from the following:
  • B LAW 3058 - The Law of Contracts and Agency (4.0 cr)
  • FINA 4121 - Financial Markets and Interest Rates (2.0 cr)
  • FINA 4321 - Portfolio Management and Performance Evaluation (2.0 cr)
  • FINA 4522 - Options & Derivatives I (2.0 cr)
  • INS 4100 - Corporate Risk Management (2.0 cr)
  • INS 4200 - Insurance Theory and Practice (2.0 cr)
  • MGMT 3040 - Understanding the International Environment of Firms: International Business (2.0 cr)
  • MGMT 4040 - Negotiation Strategies (4.0 cr)
  • MKTG 3010 - Marketing Research (4.0 cr)
  • MKTG 3040 - Buyer Behavior (4.0 cr)
  • SCO 3045 - Sourcing and Supply Management (2.0 cr)
  • SCO 3072 - Managing Technologies in the Supply Chain (2.0 cr)

Entrepreneurship and Business Management

Students must take a minimum of two APEC courses (6-8 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 3451 - Food and Agricultural Sales (3.0 cr)
  or APEC 3551 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (3.0 cr)
  or APEC 3840 - Cooperative Organization (3.0 cr)
  or APEC 4481 - Futures and Options Markets (3.0 cr)
  or APEC 4501 - Financial Modeling (3.0 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)

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 4481 - Futures and Options Markets (3.0 cr)
or APEC 4501 - Financial Modeling (3.0 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)
s  • APEC 3451 - Food and Agricultural Sales (3.0 cr)
or APEC 3821 - Retail Center Management (3.0 cr)
or APEC 4451W - Food Marketing Economics [CIW, WI] (3.0 cr)
or APEC 4501 - Financial Modeling (3.0 cr)
or APEC 4461 - Horticultural Marketing (3.0 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 2016
• 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 3 or more course(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 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)
• APEC 3411 - Commodity Marketing (3.0 cr)
• APEC 3451 - Food and Agricultural Sales (3.0 cr)
• APEC 3501 - Agribusiness Finance (3.0 cr)
• APEC 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 3840 - Cooperative Organization (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 (3.0 cr)
• APEC 4821W - Business Economics and Strategy [WI] (3.0 cr)
• APEC 4840 - 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 72 to 87
- 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
All major requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C-.

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
AFEE 3361 - World Development Problems [GP] (3.0 cr)
or AGRO 4103 - World Food Problems [GP] (3.0 cr)
or APEC 4103 - World Food Problems [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 3662W - Technical and Professional Writing [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.
AFEE 4450W - Advanced Agricultural Journalism and Persuasive Writing for Ag, Food & Environmental Sciences [WI] (3.0 cr)
or APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
or AFEE 5111W - Agricultural Education: Methods of Teaching [WI] (4.0 cr)

Major Courses
AFEE 1001 - Introduction to Agricultural Education, Communication & Marketing (1.0 cr)
AFEE 2096 - Professional Practicum in Agricultural Education: Early Experience (1.0 - 3.0 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 - Introduction to Mass Communication [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] (4.0 cr)

Leadership and Business Management
AFEE 2221W - Foundations of Leadership Practice [WI] (3.0 cr)
APEC 1251 - Principles of Accounting (3.0 cr)
APEC 3451 - Food and Agricultural Sales (3.0 cr)
or MKTG 4030 - Sales Management (4.0 cr)
or MKTG 3001 - Principles of Marketing (3.0 cr)
APEC 3811 - Principles of Farm Management (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
or APEC 3821 - Retail Center Management (3.0 cr)
or APEC 3551 - Entrepreneurship Fundamentals for Value-Added Rural Businesses (3.0 cr)
or APEC 3411 - Commodity Marketing (3.0 cr)
or APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
or AFEE 4221 - Rural Leadership Development (3.0 cr)
or AFEE 3106 - Agricultural Policy and Issues in Minnesota (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] (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or ESPM 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or GEOG 1425 - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
or FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)

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)

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Information current as of December 01, 2016
or HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or HORT 1003 - Horticulture for the Home Gardener (3.0 cr)
or HORT 1014 - Edible Landscape [TS] (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 - Photography: Darkroom & Digital [AH] (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)

**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)
- AGRO 4401 - Plant Genetics and Breeding (4.0 cr)
or HORT 4401 - Plant Genetics and Breeding (4.0 cr)
or AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
or ESPM 3221 - Soil Conservation and Land-Use Management (3.0 cr)
or AGRO 4605 - Strategies for Agricultural Production and Management (3.0 cr)
- CFAN 3001 - Pests and Crop Protection (3.0 cr)
or HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
or Or take the following course pair:
  - BIOL 3002 - Plant Biology: Function (2.0 cr)
  - BIOL 3005W - Plant Function Laboratory [WI] (2.0 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 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 1112 - Principles of Nutrition (3.0 cr)
- FSCN 2021 - Introductory Microbiology (4.0 cr)
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
or FSCN 3612 - Life Cycle Nutrition (3.0 cr)
or FSCN 3614 - Nutrition Education and Counseling (3.0 cr)
or FSCN 3732 - Food Service Operations Management (3.0 cr)
Twin Cities Campus
Agricultural Education B.S.
Applied Economics
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 91 to 102
- This program requires summer terms.
- Degree: Bachelor of Science

The undergraduate agricultural education program is a collaborative partnership between the College of Food, Agricultural and Natural Resource Sciences (CFANS) and the College of Education and Human Development (CEHD). Graduates of the program are prepared for formal and non-formal teaching positions. Students are prepared to meet Minnesota Board of Teaching requirements in agricultural education for grades 5-12 and for teacher coordinator of work-based learning. It includes a broad study of courses in food, agriculture, and natural resources. Professional courses are focused on standards of effective teaching and content pedagogy. Students gain relevant knowledge through integrated field experience. In addition to teaching in the formal classroom, graduates are prepared for a wide range of employment opportunities in training, non-formal teaching and learning, sales, management and public relations in the food, agriculture, and natural resource industry.

Students may graduate from this program with a minimum 2.00 overall GPA, but a minimum 2.50 overall GPA is required for recommendation for Minnesota teaching licensure.

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
All major requirements must be taken A-F (unless only offered S-N) and students must earn a grade of at least C-.

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 1009 - General Biology [BIOL] (4.0 cr)

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 - Professional Practicum in Agricultural Education: Early Experience (1.0 - 3.0 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)
  or OLPD 3461 - Professional Sales Management (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] (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 - Horticulture for the Home Gardener (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 2016
- 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. All courses are to be taken A-F with a minimum grade of C- in each course.

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 (2.0 cr)
  - AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
  - AGRO 3660 - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
  - AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
  - AGRO 4605 - Strategies for Agricultural Production and Management (3.0 cr)
  - AGRO 4888 - Issues in Sustainable Agriculture (2.0 cr)
  - CFAN 3001 - Pests and Crop Protection (3.0 cr)
  - PLPA 2001 - Introductory Plant Pathology (3.0 cr)
  - SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
  - AGRO 4401 - Plant Genetics and Breeding (4.0 cr)
  - or HORT 4401 - Plant Genetics and Breeding (4.0 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 67 to 87
- This program requires summer terms.
- Degree: Bachelor of Science

The animal science major prepares students for veterinary school, work as managers or technical advisers 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
All major requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C-.

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)
• APEC 4103 - World Food Problems [GP] (3.0 cr)
• CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
• CFAN 2333 - Insects, Microbes and Plants [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)
• PLPA 2003 - Plague, Famine, and Beer: The Impact of Microscopic Organisms on Human Civilization [HIS] (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)

Upper-division writing intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• ANSC 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] (4.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

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

Industry and Business

Industry and Business Core Courses
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or HORT 2100 - Agricultural Biochemistry (3.0 cr)
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
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 - Introduction to Mass Communication [SOCS, TS] (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 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (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 (3.0 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 4002 - 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 4605 - 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)
- ANSC 3609 - Business Planning for Animal Enterprises (2.0 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)
- ENT 3281 - Veterinary Entomology (3.0 cr)
- FDSY 2102 - Diversity of Agricultural Production Systems (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)
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 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3097 - Research Proposals: From Ideas to Strategic Plans [WI] (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 (3.0 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 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
- ENT 3281 - Veterinary Entomology (3.0 cr)
- FDSY 2102 - Diversity of Agricultural Production Systems (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)
- AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)

Companion Animal

Companion Animal Core Courses

ANSC 3609 - Business Planning for Animal Enterprises (2.0 cr)
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)
or HORT 2100 - Agricultural Biochemistry (3.0 cr)

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

- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
• ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
• VBS 2100 - Companion Animal Anatomy (3.0 cr)

Animal Science Electives
Courses cannot fulfill two areas unless they are also also a liberal education requirement.
Take 11 or more credit(s) from the following:
• 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 2055 - Horse Management (2.0 cr)
• ANSC 2056 - Horse Management Practicum (2.0 cr)
• ANSC 3007 - Equine Nutrition (3.0 cr)
• ANSC 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (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 (3.0 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 4615 - Advanced Dairy Production Systems Management (4.0 cr)
• APEC 1101 - Principles of Microeconomics [SOC, 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)
• ENT 3281 - Veterinary Entomology (3.0 cr)
• FDSY 2102 - Diversity of Agricultural Production Systems (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
• AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
• APEC 1101 - Principles of Microeconomics [SOC, 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 1 or more course(s) from the following:

- 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)

Take 5 or more credit(s) from the following:

- ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- VPM 3700 - Equine Reproduction and Breeding Management (2.0 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:

- 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 1501 - 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 2055 - Horse Management (2.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3091V - Research Proposals: From Ideas to Strategic Plans [WI] (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 (3.0 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 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
- ENT 3281 - Veterinary Entomology (3.0 cr)
- FDSY 2102 - Diversity of Agricultural Production Systems (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)
- 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

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

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)

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)
- 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)
- CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
- AGRO 1103 - Crops, Environment, and Society [ENV] (4.0 cr)
- ANSC 1011 - Animals and Society [CIV] (3.0 cr)
- ANSC 1403 - Companion Animal Nutrition and Care (3.0 cr)
- ANSC 1511 - Food Animal Products for Consumers (3.0 cr)
- ANSC 2012 - Livestock and Carcass Evaluation (3.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- ANSC 3007 - Equine Nutrition (3.0 cr)
- ANSC 3305 - Reproductive Biology in Health and Disease (4.0 cr)
- ANSC 3509 - Animal Biotechnology (3.0 cr)
- ANSC 3511 - Animal Growth and Development (3.0 cr)
- ANSC 4011 - Dairy Cattle Genetics (3.0 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 3609 - Business Planning for Animal Enterprises (2.0 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 3411 - Commodity Marketing (3.0 cr)
- APEC 3451 - Food and Agricultural Sales (3.0 cr)
- APEC 3811 - Principles of Farm Management (3.0 cr)
- ENT 3281 - Veterinary Entomology (3.0 cr)
- ANSC 1701 - Historical Influence of the Horse on Society [HIS] (3.0 cr)
- ANSC 3307 - Artificial Insemination Techniques (1.0 cr)
- ANSC 2056 - Horse Management Practicum (2.0 cr)
- ANSC 3403 - Companion Animal Hot Button Issues (3.0 cr)
- ANSC 2055 - Horse Management (2.0 cr)
- ANSC 3801 - Livestock Merchandising (3.0 cr)
- ANSC 4305 - Companion & Wild Species Reproduction (2.0 cr)
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 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)
- VBS 2100 - Companion Animal Anatomy (3.0 cr)
- ANSC 1201 - Backyard Chickens - Science and Practice (3.0 cr)
- FDSY 2102 - Diversity of Agricultural Production Systems (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 3091V - Research Proposals: From Ideas to Strategic Plans [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)
• 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 2016
- 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 3xxx
- ANSC 4xxx
- ANSC 5xxx
- Courses listed below are cross-listed. Students may take these course through the department or may take the equivalent course offered by another department. Either will meet the requirement of 3XXX level course or higher for the minor.
  - 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 2016
- 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
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.

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)
APEC 1102 - Principles of Macroeconomics (3.0 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 2201 - Secure & Succeed in Internships (2.0 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 APEC 4103 - World Food Problems [GP] (3.0 cr)
or AGRO 4103 - World Food Problems [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)
or 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 2016
- 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 3 elective courses at the 3-000 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. All courses are to be taken on a letter grade basis with a minimum grade of C- in each course.

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 ECON 1102 - Principles of Macroeconomics (4.0 cr)
- Take 3 or more course(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)
  - 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)
  - APEC 4103 - World Food Problems [GP] (3.0 cr)
  - or AGRO 4103 - World Food Problems [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 2016
- 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 2016
- 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 2016
• Required credits in this minor: 16

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 andEcological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or any first semester calculus
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Minor Requirements
Minor Courses
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
ESPM 3604 - Environmental Management Systems and Strategy (3.0 cr)
Take 6 or more credit(s) from the following:
• ESPM 3011W - Ethics in Natural Resources [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 2016
- 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 Courses
- This is a required course
  ENT 1005 - Insect Biology [BIOL] (4.0 cr)

Electives
- Take 12 credits from the following:
  - Take 12 or more credit(s) from the following:
    - ENT 1905 - Topics: Freshman Seminar (1.0 - 3.0 cr)
    - 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 4022 - Honey Bee Management (1.0 cr)
    - ENT 4096 - Professional Experience Program: Internship (1.0 - 3.0 cr)
    - ENT 4231 - Insect Behavior (3.0 cr)
    - ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
    - ENT 5009 - Pesticides in Horticulture: Their Use and Abuse (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 5045 - Insect Population Dynamics (3.0 cr)
    - ENT 5051 - Scientific Illustration of Insects (3.0 cr)
    - ENT 5121 - Applied Experimental Design (4.0 cr)
    - ENT 5241 - Ecological Risk Assessment (3.0 cr)
    - ENT 5275 - Medical Entomology (3.0 cr)
    - ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
    - ENT 5351 - Insect Pathology (2.0 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)
Environmental Sciences, Policy and Management B.S.
College of Food, Agricultural and Natural Resource Sciences

Program Type: Baccalaureate
Requirements for this program are current for Fall 2016
Required credits to graduate with this degree: 120
Required credits within the major: 68 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); corporate environmental management (CEM); 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.

All major requirements must be taken A-F (unless only offered S-N) and students must earn a grade of at least C-.

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)
ESP 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
or ESP 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 BIOL 2011
BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
or BIOL 1009 - General Biology [BIOL] (4.0 cr)

Experiential Learning
ESP 4021W or ESPM 4041W fulfills this requirement.

Interdisciplinary Learning
ESP 4021W or ESPM 4041W fulfills this 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:
- 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.

Corporate Environmental Management
The CEM sub-plan provides graduates with the fundamental skills to systematically determine the environmental burdens associated with a firm's products or manufacturing processes and to identify opportunities that generate value from environmental risk reduction, regulatory compliance programs, and other alternatives for improving environmental performance. The CEM sub-plan prepares students for positions in growing environmental, health, and safety organizations housed within private enterprises, consultancies, and governmental institutions, as well as for graduate study in business, public policy, environmental sciences, and industrial ecology.

Student experiences within this sub-plan focus on analytical tools; the business, legal, regulatory, and ethical framework in which industrial firms operate; physical, chemical, and biological mechanisms associated with industrial emissions; techniques used to reduce the environmental impacts of industrial activity; and effective communication.

Social Sciences
APEC or ECON course preferred for Management minors
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)
ESP 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)

Prerequisite CEM Courses
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
MATH 1271 - Calculus I [MATH] (4.0 cr)
MATH 1272 - Calculus II (4.0 cr)
STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
MGMT 3001 - Fundamentals of Management (3.0 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)
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)

CEM Track Required Courses
CEGE 3501 - Environmental Engineering [ENV] (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)
SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or
ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
or
Appropriate study abroad
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)

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

- ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (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 3656 - Composting and Organics Utilization (3.0 cr)
- ESPM 4216 - Contaminant Hydrology (3.0 cr)
- ESPM 4601 - Environmental Pollution (3.0 cr)
- ESPM 4607 - Industrial Biotechnology and the Environment (3.0 cr)
- AEEF 3361 - World Development Problems [GP] (3.0 cr)
- 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)
- SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
- BBE 4035 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
- BBE 4038 - Environmental and Industrial Microbiology (3.0 cr)
- BBE 4174 - Engineering Principles for Biological Scientists (4.0 cr)
- ENT 5121 - Applied Experimental Design (4.0 cr)
- ENGL 3501 - Public Discourse: Coming to Terms With the Environment [LITR, ENV] (3.0 cr)
- WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
- HSCI 3244 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)

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).

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)

CRM Core Courses

- MATH 1142 - Short Calculus [MATH] (4.0 cr)
or
- MATH 1271 - Calculus I [MATH] (4.0 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)
- BIOL 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 3101 - Conservation of Plant Biodiversity (3.0 cr)
or
- ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
or
- FNRM 1101 - Dendrology: Identifying Forest Trees and Shrubs (3.0 cr)
or
- FNRM 3104 - Forest Ecology (4.0 cr)
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (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)
SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)

Internship
Requires advance approval by ESPM Internship Coordinator. See academic advisor and ESPM website to determine which course to take.
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or CFAN 3096 - Making the Most of your Internship (1.0 cr)

CRM Contract Courses
Course selections from contract area must be made through a faculty advisor. A contract is required.
Take 32 or more credit(s) including 4 or more sub-requirements(s) from the following:

Conservation and Management
Take 10 or more credit(s) from the following:
• ESPM 3101 - Conservation of Plant Biodiversity (3.0 cr)
• 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 3656 - Composting and Organics Utilization (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• ESPM 4216 - Contaminant Hydrology (3.0 cr)
• ESPM 4601 - Environmental Pollution (3.0 cr)
• BBE 4535 - Assessment and Diagnosis of Impaired Waters (3.0 cr)
• 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)
• FW 5604W - Fisheries Ecology and Management [WI] (3.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
• SSM 450W - 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 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• ESPM 5071 - Ecological Restoration (4.0 cr)
or HORT 5071 - Ecological Restoration (4.0 cr)
• SOIL 5555 - Wetland Soils (3.0 cr)
or ESPM 5555 - Wetland Soils (3.0 cr)
• 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 4021W - Problem Solving: Environmental Review [WI] (4.0 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)
  • FNRM 5412 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
• FW 5051 - Analysis of Populations (4.0 cr)
• GIS 5571 - ArcGIS I (3.0 cr)
• Take 1 or more course(s) totaling 2 - 3 credit(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)
• PBIO 4321 - Minnesota Flora (3.0 cr)
• SOIL 4093 - Directed Study (1.0 - 7.0 cr)
• SOIL 4511 - Field Study of Soils (2.0 cr)
• FNRM 2101 - Identifying Forest Plants (1.0 cr)
  with FNRM 2102 - Northern Forests Field Ecology (2.0 cr)
• FNRM 2104 - Measuring Forest Resources (1.0 cr)

• Take 3 or more credit(s) from the following:
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 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)

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 9 or more credit(s) from the following:
• ESPM 2401 - Environmental Education/Interpretation (3.0 cr)
• ESPM 4811 - Environmental Interpretation (3.0 cr)
• APEE 3430 - Communicating Food, Agriculture & Environmental Science to the Public (3.0 cr)
• COMM 3401 - Introduction to Communication Theory (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• 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] (4.0 cr)
• WRIT 3221W - Communication Modes and Methods [WI] (4.0 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] (4.0 cr)
• Take exactly 1 course(s) from the following:
  • EPSY 5243 - Principles and Methods of Evaluation (3.0 cr)
  • OLDP 5501 - Principles and Methods of Evaluation (3.0 cr)
  • FNRM 5259 - Visitor Behavior Analysis (3.0 cr)

Human Dimensions
• ESPM 3011W - Ethics in Natural Resources [WI] (3.0 cr)

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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 3202W - 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 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)
• SOC 3451W - Cities & Social Change [WI] (3.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• CSCL 3361 - 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] (3.0 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 EEB 5201 - 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)

Organismal 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)
• BIOL 2022 - General Botany (3.0 cr)
• PBIO 4321 - Minnesota Flora (3.0 cr)
• PBIO 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 - Grand Challenge: 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 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)

Environmental Science
The ES sub-plan focuses on the application and integration of basic and applied sciences to solve complex environmental problems.
Students can earn professional licenses and certification in several areas and will be qualified to work as soil scientists, hydrologists, water quality and wetland ecology scientists, environmental remediation scientists, climatologists, and atmospheric scientists. Graduates find jobs with environmental regulatory agencies, private consulting firms, and nonprofit organizations. This sub-plan provides a diverse basic and applied science background that also prepares students for scientific research through advanced graduate studies.

Students in this sub-plan use an understanding of biology, chemistry, physics, and mathematics to develop a broad knowledge base in soil, hydrologic, atmospheric, and biological sciences. Students study the interaction between science and the functioning of urban, forested, and agricultural lands, as well as hydrologic, atmospheric, soil, and wetland resources.

**Social Sciences**

- **ESPM 3261** - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
  - or **APEC 1101** - Principles of Microeconomics [SOCS, GP] (4.0 cr)
  - or **ECON 1101** - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- **ESPM 3241W** - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
  - or **ESPM 3271** - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)

**Additional Basic Science and Math Courses**

- **CHEM 1061** - Chemical Principles I [PHYS] (3.0 cr)
- **CHEM 1065** - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- **CHEM 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 **BIOL 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**

- **ESPM 1425** - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
- **ESPM 4096** - Professional Experience Program: Internship (1.0 cr)
- **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)
- **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] (3.0 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)
- **PBIO 4321** - Minnesota Flora (3.0 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)

**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 advisor, 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)
- **ESPM 3656** - Composting and Organics Utilization (3.0 cr)
- **LAAS 5515** - Soil Formation: Earth Surface Processes and Biogeochemistry (3.0 cr)
- **SOIL 3416** - Plant Nutrients in the Environment (3.0 cr)
• SOIL 3521 - Soil Judging (1.0 cr)
• SOIL 4511 - Field Study of Soils (2.0 cr)
• ESCI 4703 - Glacial Geology (4.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• SOIL 5555 - Wetland Soils (3.0 cr)
or ESPM 5555 - Wetland Soils (3.0 cr)

- Water Sciences
Take 0 or more course(s) from the following:
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• ESPM 4216 - Contaminant Hydrology (3.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 5605 - Limnology Laboratory (2.0 cr)
• 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)
• ESPM 5402 - Biometeorology (3.0 cr)
• AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
• AGRO 5321 - Ecology of Agricultural Systems (3.0 cr)
• BIOL 3002 - Plant Biology: Function (2.0 cr)
• BIOL 3005W - Plant Function Laboratory [WI] (2.0 cr)
• BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
• BIOL 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 5009W - Grand Challenge: 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] (3.0 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)
• ESCI 3002 - Climate Change and Human History [ENV] (3.0 cr)
• GEOG 5426 - Climatic Variations (3.0 cr)
• GEOG 5565 - Geographical Analysis of Human-Environment Systems (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 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 3603 - Environmental Life Cycle Analysis (3.0 cr)
• ESPM 4216 - Contaminant Hydrology (3.0 cr)
• ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
• ESPM 4601 - Environmental Pollution (3.0 cr)
• ESPM 5601 - Principles of Waste Management (3.0 cr)
• CEGE 3501 - Environmental Engineering [ENV] (3.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• ENT 5241 - Ecological Risk Assessment (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 6103 - Exposure to Environmental Hazards (2.0 cr)
• PUBH 6104 - Environmental Health Effects (2.0 cr)
• PUBH 6105 - Environmental and Occupational Health Policy (2.0 cr)
• PUBH 6132 - Air, Water, and Health (2.0 cr)
• PUBH 6175 - Environmental Measurements Laboratory (2.0 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
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: 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)
or Appropriate Study Abroad

Field Session Options
ESPM 4096 - Professional Experience Program: Internship (1.0 cr)
or Cloquet Field Session
Summer
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)

Methods
Choose one course from the following.
ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
or POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
or PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
or FNRM 5269 - Visitor Behavior Analysis (3.0 cr)
Take exactly one course from the following:
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
or GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
ESPM 3012 - Statistical Methods for Environmental Scientists and Managers [MATH] (4.0 cr)
or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or SOC 3811 - Social Statistics [MATH] (4.0 cr)

Ecology and Management
Choose 3 credits from the following.
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
- ESPM 3656 - Composting and Organics Utilization (3.0 cr)
- ESPM 3575 - Wetlands (3.0 cr)
- FNRM 3104 - Forest Ecology (4.0 cr)
- FNRM 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)
- FNRM 3101 - Park and Protected Area Tourism (3.0 cr)
- FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
- FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
- GCC 5008 - Grand Challenge: 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 advisor for appropriate minors. A contract for 12 credits, signed by your faculty advisor, is required. All courses must be upper division.

PPLS Contract credits
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 2016
• 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)

Local 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] (3.0 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 [WI] (3.0 cr)
- ESPM 3101 - Conservation of Plant Biodiversity (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 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 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)
• PBIO 4321 - Minnesota Flora (3.0 cr)
• PBIO 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)
• GCC 5008 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• ENT 5241 - Ecological Risk Assessment (3.0 cr)
• WRS 5241 - Ecological Risk Assessment (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)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 72 to 87
- 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 wildlife. Although no computer course is required, students are expected to be computer literate and competent using word processing, spreadsheet, and email software.

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

Fisheries, Wildlife, and Conservation Biology Courses
FW 1001 - Orientation in Fisheries, Wildlife, and Conservation Biology (1.0 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)
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (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
FW 2001W fulfills this requirement.

Experiential Learning
CFAN 3514 or FW 5051 fulfills this 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:
• EEB 3408W - Ecology [WI] (3.0 cr)
• EEB 4069W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• ESPM 3011W - Ethics in Natural Resources [WI] (3.0 cr)
• ESPM 3202W - Environmental Conflict Management, Leadership, and Planning [WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
• 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-.

Communication Skills
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 3 or more course(s) totaling 9 or more credit(s) from the following:
• ESPM 3020W - 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 [WI] (3.0 cr)
• ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)
• ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
• ESPM 3271 - Environmental Policy, Law, and Human Behavior [CIV, SOCS] (3.0 cr)
• SUST 3003 - Sustainable People, Sustainable Planet [ENV] (3.0 cr)
• FW 3925 - Human Dimensions of Fisheries and Wildlife Management (3.0 cr)

Animals and Plants
Take 2 or more course(s) from the following:
• FW 2003 - Introduction to Marine Biology (3.0 cr)
• FW 4136 - Ichthyology (4.0 cr)
• FW 4101 - Herpetology (4.0 cr)
• ENT 5021 - Insect Biodiversity and Evolution (4.0 cr)
• ENT 5361 - Aquatic Insects (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)
• PBIO 4321 - Minnesota Flora (3.0 cr)
• PBIO 4511 - Flowering Plant Diversity (3.0 cr)

Community and Ecosystem Ecology
FNRM 3204 - Landscape Ecology and Management (3.0 cr)
Take 1 or more course(s) from the following:
• FNRM 3104 - Forest Ecology (4.0 cr)
• ESPM 3575 - Wetlands (3.0 cr)
• EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (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)

Conservation Biology
FW 4102 - Principles of Conservation Biology [ENV] (3.0 cr)
FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
Take 1 or more course(s) from the following:
• FW 4103 - Principles of Wildlife Management (3.0 cr)
• FW 5051 - Analysis of Populations (4.0 cr)
• FW 5603W - Habitats and Regulation of Wildlife [WI] (3.0 cr)
• FW 5604W - Fisheries Ecology and Management [WI] (3.0 cr)

Fisheries
The fisheries 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-.

Communication Skills
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:
• 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 [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
FW 4136 - Ichthyology (4.0 cr)
FW 4401 - Fish Physiology and Behavior (3.0 cr)
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 5021 - Insect Biodiversity and Evolution (4.0 cr)
• ENT 5361 - Aquatic Insects (4.0 cr)

**Community and Ecosystem Ecology**
EEB 5601 - Limnology (3.0 cr)
Take 1 or more course(s) from the following:
• FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
• FNRM 3204 - Landscape Ecology and Management (3.0 cr)
• ESPM 3575 - Wetlands (3.0 cr)
• ESPM 4061W - Water Quality and Natural Resources [ENV, WI] (3.0 cr)
• EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
• ESPM 5071 - Ecological Restoration (4.0 cr)

or HORT 5071 - Ecological Restoration (4.0 cr)

**Fisheries**
FW 5051 - Analysis of Populations (4.0 cr)
FW 5604W - Fisheries Ecology and Management [WI] (3.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (3.0 cr)

or CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)

or CHEM 2301 - Organic Chemistry I (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)

**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**
Take 2 or more course(s) totaling at most 8 credit(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] (4.0 cr)
• WRIT 3221W - Communication Modes and Methods [WI] (4.0 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 [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)

**Animal and Plants**
BIOL 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)
• EEB 4839 - Field Studies in Mammalogy (4.0 cr)
• EEB 4134 - Introduction to Ornithology (4.0 cr)
• 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)
• PBIO 4321 - Minnesota Flora (3.0 cr)
• PBIO 4511 - Flowering Plant Diversity (3.0 cr)

**Community and Ecosystem Ecology**

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Information current as of December 01, 2016
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 5108 - 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 (D.V.M.) 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 D.V.M. 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)
- 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)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
  or CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
- 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 1201W - 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 - Geographical Information Systems (GIS) for Natural Resources [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 [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 2016
- 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] (3.0 cr)
- or any other ecology course approved by the Undergraduate Coordinator

Principles of Fisheries, Wildlife and Conservation Biology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- FW 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 [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 3271 - 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)

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Information current as of December 01, 2016
• 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.
Food Science & Nutrition
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 98 to 111
- No.
- Degree: Bachelor of Science

Food science applies chemistry, microbiology, and engineering to the science and technology of making foods. Chemistry—because foods undergo chemical reactions when they are heated, frozen, mixed with each other, and stored. Microbiology—because many foods are made by microorganisms (e.g., bread, cheese, yogurt, sauerkraut, tempeh), and because microorganisms cause extensive, rapid, and often dangerous spoilage. Physics and engineering—because foods must be constructed, moved through the factory, made safe, and distributed intact to the consumer.

Food science involves creating new food products and making current products more stable, nutritious, convenient, reliable, and safe. 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.

- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- MATH 1142 - Short Calculus [MATH] (4.0 cr)
  or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)

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

Additional courses include:
- BIOC 3021 - Biochemistry (3.0 cr)
- or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
- or 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 Track A
Food Science Track A complies with the Core Competencies Student Learning Objectives of the Institute of Food Technologists (IFT): the professional organization in Food Science that provides approval to undergraduate programs. Students default into the Track A sub-plan. Students must meet with an adviser in order to declare the Track B sub-plan.

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 1112 - Principles of Nutrition (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 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)

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 PSTL 1461 {Inactive} [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 Track B
Food Science Track B offers a plan of study with over 21 free electives, high impact experiential learning, and an interdisciplinary course. Track B provides students with the freedom to choose between five Areas of Emphasis that will prepare them to be competitive as they enter the workforce. The Areas of Emphasis are: 1) Advanced Food Technology 2) Nutrition (which includes enough coursework to add a Nutrition minor) 3) Chemistry 4) Microbiology 5) Biochemistry (which includes enough coursework to add a Biochemistry minor).

Students must meet with an adviser in order to declare Track B.

Additional Foundation Courses - Chemistry
CHEM 2301 - Organic Chemistry I (3.0 cr)
or BIOL 2331 - Chemical Mechanisms in Biology (3.0 cr)

Professional Courses
BBE 4744 - Engineering Principles for Biological Scientists (4.0 cr)
FSCN 1112 - Principles of Nutrition (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 2016
• 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.

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.

Agromony & Plant Genetics, Animal Science, Entomology, Food Science & Nutrition, Horticultural Science

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 chose 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
All major requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C-.

Integrated Food Systems Core Courses
- AGRO 1660W - First-Year Colloquium/Experience in Agroecosystems Analysis [WI] (2.0 cr)
- 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)
Communications
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
AEE 2421 - Professional Communication for Agriculture, Food, and the Environment (3.0 cr)
or COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)

Physical and Biological Sciences
FSCN 1112 - Principles of Nutrition (3.0 cr)
BIOL 1009 - General Biology [BIOL] (4.0 cr)
or HORT 1001 - Plant Propagation [BIOL] (4.0 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 also meets Integrated Food Systems Core Course

Experiential Learning
CFAN 3096 - Making the Most of your Internship (1.0 cr)
or CFAN 2201 - Secure & Succeed in Internships (2.0 cr)
or HORT 4096W - Professional Experience Program: Internship [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:
• 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)
HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
HORT 2100 - Agricultural Biochemistry (3.0 cr)
or BIOC 3021 - Biochemistry (3.0 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 (2.0 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 [TS] (3.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
• ESPM 5071 - Ecological Restoration (4.0 cr)
- HORT 1014 - Edible Landscape [TS] (3.0 cr)
- GCC 3001 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- AGRO 4103 - World Food Problems [GP] (3.0 cr)
  or APEC 4103 - World Food Problems [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.

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 3840 - Cooperative Organization (3.0 cr)
- APEC 4451W - Food Marketing Economics [CIV, WI] (3.0 cr)
- APEC 4481 - Futures and Options Markets (3.0 cr)
- APEC 4481W - Business Economics and Strategy [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 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- AGRO 4103 - World Food Problems [GP] (3.0 cr)
  or APEC 4103 - World Food Problems [GP] (3.0 cr)
- HORT 4461 - Horticultural Marketing (3.0 cr)
  or APEC 4461 - Horticultural Marketing (3.0 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
- APS 4072 - What Does It Mean to Be Green? (3.0 cr)
- HORT 2100 - Agricultural Biochemistry (3.0 cr)
- HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
- CFAN 2333 - Insects, Microbes and Plants [TS] (3.0 cr)
- HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
- HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
- SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Track Electives
Take 6 or more credit(s) from the following. Students who completed HORT 1001 to fulfill the Physical and Biological Sciences major requirement should take 10 or more credit(s) from the following:
Take 6 or more credit(s) from the following:
- ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
- ESPM 3656 - Composting and Organics Utilization (3.0 cr)
- FDSY 2102 - Diversity of Agricultural Production Systems (3.0 cr)
- HORT 1015 - Woody and Herbaceous Plants (4.0 cr)
- HORT 4015 - Advanced Woody and Herbaceous Plant Topics (1.0 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 4603 - Fruit Production and Viticulture for Local and Organic Markets (3.0 cr)
- HORT 4603 - Organic Vegetable Production (3.0 cr)
• HORT 5051 - Plant Production II (4.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
• GCC 3001 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
• AGRO 4103 - World Food Problems [GP] (3.0 cr)
  or APEC 4103 - World Food Problems [GP] (3.0 cr)
• HORT 4401 - Plant Genetics and Breeding (4.0 cr)
  or AGRO 4401 - Plant Genetics and Breeding (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.
Twin Cities Campus
Food Systems Minor
Agronomy & 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 2016
• 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:

- FDSY 2101 - Plant Production Systems (3.0 cr)
- BBE 3201 - Sustainability of Food Systems: A Life Cycle Perspective [GP] (3.0 cr)
- APEC 3202 - An Introduction to the Food System: Analysis, Management and Design (3.0 cr)

Electives
Complete a minimum of 9 credits within one of the following three tracks.

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

• ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)
• HORT 2100 - Agricultural Biochemistry (3.0 cr)
or
• BIOC 3021 - Biochemistry (3.0 cr)
• HORT 3005W - Environmental Effects on Horticultural Crops [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 4103 - World Food Problems [GP] (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 5811 - Cooperative Organization (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 4072 - What Does It Mean to Be Green? (3.0 cr)
- HORT 2100 - Agricultural Biochemistry (3.0 cr)
- HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
- CFAN 2333 - Insects, Microbes and Plants [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)
Forest and Natural Resource Management B.S.

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 83 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
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.

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)
BIOL 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)

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 Planning and Management (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, FNRM 2102 Northern Forest Field Ecology, or one course approved by the major coordinator.

Interdisciplinary Learning
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
or ESPM 3575 - Wetlands (3.0 cr)
or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
or ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
or AGRO 4103 - World Food Problems [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 APEC 4103 - World Food Problems [GP] (3.0 cr)
or BBE 4412W - Biocomposites and Biomass Energy [WI] (4.0 cr)
or CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
or CFAN 2333 - Insects, Microbes and Plants [TS] (3.0 cr)
or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (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 ESPM 3101 - Conservation of Plant Biodiversity (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 5259 - 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 2-4 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 or one course approved by the major coordinator.

**Interdisciplinary Learning**
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
or ESPM 3575 - Wetlands (3.0 cr)
or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
or ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)
or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
or AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
or AGRO 4103 - World Food Problems [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 APEC 4103 - World Food Problems [GP] (3.0 cr)
or BBE 4412W - Biocomposites and Biomass Energy [WI] (4.0 cr)
or CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
or CFAN 2333 - Insects, Microbes and Plants [TS] (3.0 cr)
or FNRM 21102 - Food: Safety, Risks, and Technology [CIV] (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)
BIOL 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, FW 2102 Northern Forests Field Ecology, or one course approved by the major coordinator.

Interdisciplinary Learning
FW 2001W - Introduction to Fisheries, Wildlife, and Conservation Biology [ENV, WI] (3.0 cr)
  or ESPM 1011 - Issues in the Environment [ENV] (3.0 cr)
  or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
  or ESPM 3575 - Wetlands (3.0 cr)
  or ESPM 4021W - Problem Solving: Environmental Review [WI] (4.0 cr)
  or ESPM 4041W - Problem Solving for Environmental Change [WI] (4.0 cr)
  or AGRO 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
  or AGRO 3305 - Agroecosystems of the world [GP] (3.0 cr)
  or AGRO 4103 - World Food Problems [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 APEC 4103 - World Food Problems [GP] (3.0 cr)
  or BBE 4412W - Biocomposites and Biomass Energy [WI] (4.0 cr)
  or CFAN 1501 - Biotechnology, People, and the Environment [TS] (3.0 cr)
  or CFAN 2333 - Insects, Microbes and Plants [TS] (3.0 cr)
  or FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (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)
Twin Cities Campus
Forest Ecosystem Management and Conservation 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 2016
- Required credits in this minor: 18

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 Planning and Management (3.0 cr)
FNRM 3472W - Managing Recreational Lands [WI] (4.0 cr)

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 2016
- 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
Twin Cities Campus

Integrated Pest Management in Cropping Systems 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 2016
• Required credits in this minor: 20 to 21

Students in this interdisciplinary minor learn how the environment and cropping systems interact with the biology of the major agronomic or horticultural crop pests. Students also learn to select and apply efficient, economically and environmentally sound pest management tactics. Courses come from agronomy and plant genetics, entomology, horticultural science, plant pathology, and soil, water, and climate. The minor provides sufficient knowledge and skills for employment in agricultural crop protection, product development and sales, crop management consultation, pest regulation, research, or application of agricultural crop protection materials. Students must complete 20 credits for this minor.

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

Minor Requirements

Minor Courses Required
AGRO 4505 - Biology, Ecology, and Management of Invasive Plants (3.0 cr)
ENT 1005 - Insect Biology [BIOL] (4.0 cr)
HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
PLPA 2001 - Introductory Plant Pathology (3.0 cr)

Course List - Management and Applied Courses
Take 6 or more credit(s) from the following:
• AGRO 2501 - Plant Identification for Urban and Rural Landscapes (2.0 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)
• CFAN 2333 - Insects, Microbes and Plants [TS] (3.0 cr)
• ENT 4001 - Agroecology and Insect Pests (3.0 cr)
• ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
• HORT 4061W - Turfgrass Management [WI] (3.0 cr)
• HORT 5032 - Organic Vegetable Production (3.0 cr)
• PLPA 5660 - Plant Disease Resistance and Applications (3.0 cr)
Twin Cities Campus
International Agriculture Minor
College of Food, Agri & Natural Resource Sciences
College of Food, Agricultural and Natural Resource Sciences

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2016
• 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 18 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)
• AGRO 4103 - World Food Problems [GP] (3.0 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] (3.0 cr)

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

Food Production and Culture
Take at most 9 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)
• AGRO 4103 - World Food Problems [GP] (3.0 cr)
  or APEC 4103 - World Food Problems [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 at most 9 credit(s) from the following:
  • AFEE 5361 - World Development Problems (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 at most 6 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 2016
- 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

Introduction to Cultural Systems

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 "Native American Environmental Knowledge" in spring. Students may choose to take both freshman seminars or one freshmen seminar and another American Indian studies course.

- CFAN 1902 - Topics: Freshman Seminar [DSJ] (3.0 cr)
- CFAN 1902 - Topics: Freshman Seminar [DSJ] (3.0 cr)
  - or AMIN 1902 - Freshman Seminar [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: A 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)
- RELS 3321 - American Indian Philosophies [AH, DSJ] (4.0 cr)
  - or AMIN 3301 - American Indian Philosophies [AH, DSJ] (4.0 cr)
- HIST 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
  - or AMIN 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
- POL 4525W - Federal Indian Policy [WI] (3.0 cr)
  - or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
- 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 person 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 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 74 to 100
- 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](http://www.umn.edu/officeofadmissions).

General Requirements

All students are required to 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/admissions/requirements).

Required courses for the major or minor in which a 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

- 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)
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- ANSC 3301 - Human and Animal Physiology (3.0 cr)
- BIOC 3301 - Biology of Microorganisms (5.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Core Courses

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Information current as of December 01, 2016
All nutrition major students are required to complete these core nutrition-related courses.

- **FSCN 1112 - Principles of Nutrition (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 4614 - Community Nutrition [SOCS, DSJ] (3.0 cr)**
- **FSCN 4621W - Nutrition and Metabolism [WI] (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 CFAN 2201 - Secure & Succeed in Internships (2.0 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 4621W - Nutrition and Metabolism [WI] (4.0 cr)**

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

**Didactic Program in Dietetics**
The Didactic Program in Dietetics (DPD) provides excellent undergraduate preparation to meet the knowledge requirements delineated by the American Dietetic Association (ADA) 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 chemistry, 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 a dietetic internship, 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 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.

Capstone course options for students in the DPD Program. Students may take either FSCN 4664 or FSCN 4667.

- **FSCN 4667 - Senior Seminar for the Didactic Program in Dietetics (2.0 cr)**
- **or FSCN 4664 - Senior Capstone: Becoming a Registered Dietitian (1.0 cr)**

**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**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2311</td>
<td>Organic Lab</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>PHYS 1201W</td>
<td>Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)</td>
<td></td>
</tr>
<tr>
<td>PHYS 1202W</td>
<td>Introductory Physics for Biology and Pre-medicine II [PHYS, WI] (5.0 cr)</td>
<td></td>
</tr>
<tr>
<td>FSCN 4622</td>
<td>Nutritional Toxicology, the basic science of diet-related toxicants (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>BIOL 4003</td>
<td>Genetics</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GCD 3022</td>
<td>Genetics</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>MATH 1142</td>
<td>Short Calculus [MATH] (4.0 cr)</td>
<td></td>
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<tr>
<td>or MATH 1271</td>
<td>Calculus I [MATH] (4.0 cr)</td>
<td></td>
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<tr>
<td>MATH 1272</td>
<td>Calculus II (4.0 cr)</td>
<td></td>
</tr>
<tr>
<td>FSCN 4112</td>
<td>Food Chemistry and Functional Foods (3.0 cr)</td>
<td></td>
</tr>
<tr>
<td>or FSCN 4121</td>
<td>Food Microbiology (3.0 cr)</td>
<td></td>
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<tr>
<td>or NUTR 5622</td>
<td>Vitamin and Mineral Biochemistry (3.0 cr)</td>
<td></td>
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<tr>
<td>or NUTR 5624</td>
<td>Nutrition and Genetics (2.0 cr)</td>
<td></td>
</tr>
</tbody>
</table>

**Organic Chemistry II**

- Organic Chemistry II options for students in the nutrition science sub-plan.
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- or CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)

**Course Group 1**

**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)

**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
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 2016
- 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 (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 4614 - Community Nutrition [SOCS, DSJ] (3.0 cr)
• FSCN 4621W - Nutrition and Metabolism [WI] (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 2016
- Required credits in this minor: 18 to 20

This minor prepares students for positions related to parks and trails management and nature-based tourism. Students will learn about theory and practice in parks and trails planning, recreation management, nature-based tourism, environmental interpretation, and visitor behavior monitoring and management.

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 3388 - 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 - Ecuador: Sustainability of its peoples, lands, and waters [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] (3.0 cr)
- CFAN 3514 - Machu Picchu: Biodiversity & Climate Change in Peru [ENV] (3.0 cr)
- CFAN 3516 - Sustainable Food Systems of Italy (3.0 cr)
- ANTH 3980 - Topics in Anthropology (3.0 cr)
- ANTH 5990 - Topics in Archaeology (3.0 cr)

-OR-

International Tourism Option
Six credits international tourism coursework at UMN/or partner institute selected in consultation with and approved by minor adviser.
Twin Cities Campus

Plant Science B.S.
Agronomy & Plant Genetics, Entomology, Horticultural Science, Plant Pathology
College of Food, Agricultural and Natural Resource Sciences

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 70 to 75
- 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
All major requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C-.

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 [TS] (3.0 cr)
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 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)

Plant Breeding
AGRO 3660 - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
  or AGRO 4401 - Plant Genetics and Breeding (4.0 cr)
  or HORT 4071W - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
  or HORT 4401 - Plant Genetics and Breeding (4.0 cr)

Applied Crop Physiology and Development
HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)

Biology or Plant Propagation
HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or BIOL 2022 - General Botany (3.0 cr)

Biochemistry
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)

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 BBE 4412W - Biocomposites and Biomass Energy [WI] (4.0 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 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 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 AGRO 4103 - World Food Problems [GP] (3.0 cr)
or APEC 4103 - World Food Problems [GP] (3.0 cr)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. This requirement is fulfilled with HORT 3005W (one of the courses listed above).

Program of Study

In consultation with their advisor, students develop a program of study consisting of at least 25 credits, with a minimum of 15 credits at the 3xxx-level or above. Of these 25 credits, students need to take a minimum of 12 credits of AGRO, HORT, PLPA or ENT designators. The remaining credits should come from plant science related disciplines. Courses used to meet core requirements may not also be used for the program of study. See sample plans for suggested program of study tracks and courses.

Take 25 or more credit(s) from the following:
• AGRO 3660 - Plant Genetic Resources: Identification, Conservation, and Utilization (3.0 cr)
• AGRO 4097 - Undergraduate Research Thesis (1.0 - 6.0 cr)
• AGRO 4401 - Plant Genetics and Breeding (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)
• AGRO 4888 - Issues in Sustainable Agriculture (2.0 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)
• ENT 1005 - Insect Biology [BIOL] (4.0 cr)
• ENT 3925 - Insects, Aquatic Habitats, and Pollution (3.0 cr)
• ENT 4015 - Ornamentals and Turf Entomology (3.0 cr)
• ENT 5341 - Biological Control of Insects and Weeds (3.0 - 4.0 cr)
• ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• ESPM 3612W - Soil and Environmental Biology [WI] (4.0 cr)
• ESPM 5071 - Ecological Restoration (4.0 cr)
• ESPM 5071 - Ecological Restoration (4.0 cr)
• HORT 1014 - Edible Landscape [TS] (3.0 cr)
• HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
• HORT 3480 - Topics in Sustainable Horticulture (1.0 - 3.0 cr)
• HORT 4015 - Advanced Woody and Herbaceous Plant Topics (1.0 cr)
• 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)
• HORT 4071W - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
• HORT 4114W - Scheduling Crops for Protected Environments [WI] (4.0 cr)
• HORT 4461 - Horticultural Marketing (3.0 cr)
• HORT 5007 - Advanced Plant Propagation (3.0 cr)
• HORT 5023 - Public Garden Management (2.0 cr)
• HORT 5031 - Fruit Production and Viticulture for Local and Organic Markets (3.0 cr)
• HORT 5051 - Plant Production II (4.0 cr)
• PLPA 2001 - Introductory Plant Pathology (3.0 cr)
• PLPA 3003 - Diseases of Forest and Shade Trees (3.0 cr)
• PLPA 5660 - Plant Disease Resistance and Applications (3.0 cr)
• SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
Twin Cities Campus

Soil Science Minor

College of Food, Agricultural and Natural Resource Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 20 to 27
- 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)
ESPM 4216 - Contaminant Hydrology (3.0 cr)
SOIL 3416 - Plant Nutrients in the Environment (3.0 cr)
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)
SOIL 4093 - Directed Study [WI] (1.0 - 7.0 cr)
ESPM 4601 - Environmental Pollution (3.0 cr)
SOIL 5232 - Vadose Zone Hydrology (3.0 cr)
LAAS 5515 - Soil Formation: Earth Surface Processes and Biogeochemistry (3.0 cr)
ESPM 5555 - Wetland Soils (3.0 cr)
SOIL 5555 - Wetland Soils (3.0 cr)
Twin Cities Campus
Sustainability Studies Minor
College of Food, Agr & 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 2016
- 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:
- AFEE 3361 - World Development Problems [GP] (3.0 cr)
- AFEE 5361 - World Development Problems (3.0 cr)
- APEC 3611W - Environmental and Natural Resource Economics [ENV, WI] (3.0 cr)
- CEGE 5212 - Transportation Policy, Planning, and Deployment (4.0 cr)
- CEGE 5214 - Transportation Systems Analysis (4.0 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 3247 - Sustainable Land Use Planning and Policy [LITR, ENV] (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 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
- GCC 5008 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
- PA 5232 - Transportation Policy, Planning, and Deployment (4.0 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 [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)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 4905 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• HSCI 3244 - History of Ecology and Environmentalism [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 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• SOC 4311 - Power, Justice & the Environment [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)
• ANSC 3203W - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
• CHEM 4601 - Green Chemistry [ENV] (3.0 cr)
• EEB 3407 - Ecology and Society [ENV] (3.0 cr)
• EEB 3408W - Ecology [WI] (3.0 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)
• ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
• FNRS 3101 - Park and Protected Area Tourism (3.0 cr)
• FW 4501 - Principles of Conservation Biology [ENV] (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• HORT 3131 - Student Organic Farm Planning, Growing, and Marketing (3.0 cr)
• HECU 3591 - Environmental Sustainability: Sci, Public Policy, & Cmty Action Environmental & Climate Justice [ENV] (4.0 cr)
• ESCI 5402 - Science and Politics of Global Warming (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 4733 - Renewable Energy Technologies [TS] (3.0 cr)
• CEGE 3501 - Environmental Engineering [ENV] (3.0 cr)
• CEGE 4561 - Solid Hazardous Wastes (3.0 cr)
• CEGE 5570 - Design for Sustainable Development: Discovery (3.0 - 9.0 cr)
• CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
• CEGE 5572 - Acara Social Venture Launchpad: Ideas to Impact (1.0 - 2.0 cr)
• CEGE 5573 - Design for Sustainable Development: Create II (1.0 - 5.0 cr)
• CHEN 5551 - Survey of Renewable Energy Technologies (3.0 cr)
• ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
• HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
• LA 3003 - Case Studies in Sustainable Landscape Planning and Design (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)
• URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
• LA 5514 - Making the Mississippi (3.0 cr)
Twin Cities Campus
Sustainable Agriculture Minor
Agronomy & Plant Genetics, 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 2016
- 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 in 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 adviser and coordinator.
Take 9 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)
  or AGRO 4103 - World Food Problems [GP] (3.0 cr)
  or APEC 4103 - World Food Problems [GP] (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 AMIN 3314 - Natural Resource Management and Environmental Policy in Indian Country [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 4072 - What Does It Mean to Be Green? (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)

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or HORT 1014 - Edible Landscape [TS] (3.0 cr)
or HORT 2031 (Inactive) [ENV] (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 [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)
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 2016
- 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
- SSM 1004 - Sustainable Systems Management Orientation (1.0 cr)
- MATH 1271 - Calculus I (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis (4.0 cr)
  or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
  or CEGE 3102 - Uncertainty and Decision Analysis in Civil Engineering (3.0 cr)
  or ESPM 3012 - Statistical Methods for Environmental Scientists and Managers (4.0 cr)
- CHEM 1061 - Chemical Principles I (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory (1.0 cr)
- BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives (4.0 cr)
  or BIOL 1009 - General Biology (4.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy (3.0 cr)
- HSCI 3244 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)
  or HSCI 5244 - History of Ecology and Environmentalism (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 ESPM 3261 - Economics and Natural Resources Management [SOCS, ENV] (4.0 cr)
ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
SSM 4506W - Sustainable Systems Management Capstone [WI] (3.0 cr)
SSM 2003 - Systems Thinking: Development and Applications in Sustainability (3.0 cr)
or ESPM 2021 - Environmental Sciences: Integrated Problem Solving (3.0 cr)
ESPM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
ESPM 3607 - Natural Resources Consumption and Sustainability [GP] (3.0 cr)
ESPM 3601 - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
or HSG 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)

Experiential Learning
SSM 4504W fulfills this requirement

Interdisciplinary Learning
ESPM 2021, SSM 4407W fulfills this 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:
- SSM 4407W - Sustainable Manufacturing Principles and Practices [WI] (3.0 cr)
- SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
- SSM 4506W - Sustainable Systems Management Capstone [WI] (3.0 cr)
- ESPM 3241W - Natural Resource and Environmental Policy [SOCS, CIV, WI] (3.0 cr)

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

Sustainable Products Business Management
The sustainable products business management sub-plan combines science, engineering, technology, and business coursework with cutting-edge research related to sustainable product development, business management, and their applications. This specialization prepares students to enter the workforce with the knowledge and skills necessary to design, assess, implement, and manage business systems to advance the goals of sustainable products and technologies, and bring them closer to consumers.

Additional Foundation Courses
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
APEC 1102 - Principles of Macroeconomics (3.0 cr)
or ECON 1102 - Principles of Macroeconomics (4.0 cr)

Sustainable Products Business Mgmt Specialization Courses
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)
MGMT 3001 - Fundamentals of Management (3.0 cr)
MKTG 3001 - Principles of Marketing (3.0 cr)
BBE 1002 - Biorenewable Resources [TS] (3.0 cr)
BBE 2201 - Renewable Energy and the Environment [TS] (3.0 cr)
SSM 3503 - Marketing of Bio-based Products (4.0 cr)
BBE 4302 - Biodegradation of Bioproducts (3.0 cr)
ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)

Building Science and Technology
The building science and technology sub-plan is designed to investigate and enrich the important relationships between people, their homes, and the environment. From a solid scientific and engineering base, this interdisciplinary specialization builds critical thinking skills and helps students explore the opportunities that can enhance the performance of houses and building systems.

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

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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)
BBE 4414 - Advanced Residential Building Science (4.0 cr)
BBE 4416 - Building Testing and Diagnostics (2.0 cr)
BBE 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)
BBE 4413 - Systems Approach to Residential Construction (4.0 cr)
or
HSG 4413 - A Systems Approach to Residential Construction (4.0 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
- CEGE 3501 - 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
University Honors Program
College of Biological Sciences, College of Continuing Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
• Required credits to graduate with this degree: 14 to 44
• This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year
Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php
Two honors courses
Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Sophomore Year
Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.
Two honors courses
Two honors courses (totalling at least six credits)
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Junior Year
Students engage in research, scholarship, or creative activity with a faculty mentor--an important step toward the development of a project for the honors thesis--while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.
One honors course
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
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 2016
- Required credits in this minor: 18

The urban and community forestry minor enables students in programs such as education, landscape architecture, horticultural sciences, natural resources, and related areas 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. Students must complete 18 credits for this minor.

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 9 or more credit(s) from the following:
  - ESPM 3211 - Survey, Measurement, and Modeling for Environmental Analysis (3.0 cr)
  - FNRM 3104 - Forest Ecology (4.0 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
  - 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)

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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 2016
- Required credits in this minor: 18 to 20

Increasing pressures from population growth, climate change, and other human activities are severely impacting the quality and quantity of water on a global basis. Tomorrow's scientists will require a keen understanding of factors pertaining to the biology, chemistry, hydrology and scarcity of our water resources. The minor provides students the opportunity to broaden their expertise in the area of water science. Students must complete at least 18 credits for the minor.

Note: Students interested in qualifying as a hydrologist should determine the exact requirements for the Minnesota civil service position by checking the Hydrologist I (Hydrogeology) and Hydrologist I (Water Resources) position descriptions.

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

Minor Requirements

Minor Courses
FNRM 3114 - Hydrology and Watershed Management (3.0 cr)
ESPM 4216 - Contaminant Hydrology (3.0 cr)
  or ESCI 4702 - General Hydrogeology (3.0 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 (3.0 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)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 87
- 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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

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.

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

Freshman Courses
- TH 1381 - New Voices (1.0 cr)
- TH 1391 - BFA Acting I (3.0 cr)
- TH 1392 - BFA Voice and Speech I (2.0 cr)
- TH 1393 - BFA Movement I (2.0 cr)
- TH 1501 - Introduction to Design and Technology for Live Performance (3.0 cr)
- ENGL 1181W - Introduction to Shakespeare [LITR, WI] (4.0 cr)
- TH 1395 - BFA Acting II (3.0 cr)
- TH 1396 - BFA Voice and Speech II (2.0 cr)
- TH 1397 - BFA Movement II (2.0 cr)
- Take 1 or more course(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)

Sophomore Courses
- TH 2391 - BFA Acting III (3.0 cr)
- TH 2392 - BFA Voice and Speech III (2.0 cr)
- TH 2393 - BFA Movement III (2.0 cr)
TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
TH 2395 - BFA Acting IV (3.0 cr)
TH 2396 - BFA Voice and Speech IV (2.0 cr)
TH 2397 - BFA Movement IV (2.0 cr)
TH 3172 - History of the Theatre: Age of Enlightenment to Present (3.0 cr)

Junior Courses
Fall semester of the junior year is in the London Study Abroad program. All Acting BFA students participate in the London Study Abroad program. DNCE/PE Movement Electives in the Junior and Senior year may consist of the following courses: PE 1xxx, DNCE 1001, 1010, 1020, 1040, 1110, 1120, 1210, 1302, 1331, 1343, 1345, 1349, 1352, 1254, 3110, 3120, 3220, 3312, 3337, 3351, 5110, 5120. Note: Upper-division DNCE courses require placement based on audition or consent.

LNDN 3523 - Theatricality: Understanding the Possibilities in Theater (3.0 cr)
TH 3391 - BFA Acting V (3.0 cr)
TH 3392 - BFA Voice and Speech V (2.0 cr)
TH 3393 - BFA Movement V (2.0 cr)
TH 3xxx or higher elective (3.0 cr.)
or LNDN 3xxx or higher elective (3.0 cr.)
TH 3395 - BFA Intensive I (2.0 cr)
TH 3398 - BFA Rehearsal & Performance I (2.0 cr)
TH 3399 - BFA Rehearsal and Performance II (2.0 cr)
TH 4532 - Makeup for the Actor (2.0 cr)
DNCE/PE Movement Elective (1.0 cr)

Senior Courses
TH 4391 - BFA Intensive II (2.0 cr)
TH 4393 - BFA Rehearsal and Performance III (2.0 cr)
TH 4394 - BFA Rehearsal and Performance IV (2.0 cr)
DNCE/PE Movement Elective (1.0 cr)
TH 4395 - BFA Intensive III (2.0 cr)
TH 4398 - BFA Rehearsal and Performance V (2.0 cr)
TH 4399 - BFA Rehearsal and Performance VI (2.0 cr)
DNCE/PE Movement Elective (1.0 cr)

Other Junior/Senior Requirements
TH 3xxx or higher Theatre Department Elective (3.0 cr.)
TH 4177W - Survey of Dramatic Literature I: Strategic Interpretation [WI] (3.0 cr)
or TH 4178W - Survey of Dramatic Literature II: Representation and its Effects [WI] (3.0 cr)
or TH 5181W - Blacks in American Theatre [WI] (3.0 cr)
or AFRO 5181W - Blacks in American Theatre [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:
• 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)
• AFRO 5181W - Blacks in American Theatre [WI] (3.0 cr)
Twin Cities Campus

African American and African Studies B.A.
African-American & African Studies
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper-division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper-division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

At least 13 program credits must be completed at the University of Minnesota - Twin Cities campus. All major courses must be taken A-F, and grades of C- or better must be earned. At least one upper-division course in the major (AFRO 3xxx-5xxx) must be writing intensive. Students are encouraged to meet with the AA&AS departmental advisor at least once a year. Students who double major and choose to complete the senior project requirement in their other CLA major must take an additional AFRO upper-division elective in order to complete the minimum 30 credits required for graduation. 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 one AFRO 1xxx and AFRO 4105 for a total of 6 credits.
AFRO 1012 - Black Worlds in Global Perspective: Challenges and Changes [SOCS, GP] (3.0 cr)
or AFRO 1021 - Introduction to Africa [GP] (4.0 cr)
or AFRO 1023W - Introduction to African World Literature [GP, LITR, WI] (3.0 cr)
or AFRO 1201 - Racial Formation and Transformation in the United States [SOCS, DSJ] (3.0 cr)
or AFRO 1902 - Freshman Seminar [DSJ] (3.0 cr)
AFRO 4105 - Ways of Knowing in Africa and the African Diaspora (3.0 cr)

Electives
Take 7 courses for a total of 21 credits. At least one elective must be a Gender-focused Elective.
Take 7 or more 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 3141 - Africa (3.0 cr)
  • AFRO 3204 - History of South Africa to 1910 (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 3543 - Psychology and the Black American Experience (3.0 cr)
  • AFRO 3601W - African Literature [LITR, GP, WI] (3.0 cr)
• AFRO 3654 - African Cinema [AH, GP] (4.0 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 - 3.0 cr)
• AFRO 3xxx
• 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 4557 - History of the Field: Development of African American, African, and African Diasporic Studies (3.0 cr)
• AFRO 4910 - Topics in African American and African Studies (1.0 - 3.0 cr)
• AFRO 4xxx
• 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 5551 - Methods: Use of Oral Traditions as Resources for History (3.0 cr)
• AFRO 5876 - Proseminar: Approaches to African Development (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 5xxx
• 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 3435 - History of South Africa from 1910 (3.0 cr)
• AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
or HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 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 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, WI] (4.0 cr)
or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, 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 (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 - 4.0 cr)
or HIST 3864 - African American History, 1619-1865 (3.0 - 4.0 cr)
or AFRO 3865 - African American History: 1865 to the Present (3.0 cr)
or HIST 3865 - African American History, 1865 to Present (3.0 cr)
• 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 [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 adviser.
Take 1 or more course(s) from the following:
• AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
or GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
• AFRO 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
• AFRO 3625W - Women Writers of Africa and the African Diaspora [LITR, GP, WI] (3.0 cr)
or AFRO 5625 - Women Writers of Africa and the African Diaspora (3.0 cr)
• AFRO 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
or 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, WI] (4.0 cr)
or AFRO 3688W - Race, War, and Race Wars in American History [WI] (3.0 cr)
or HIST 3868W - Race, War, and Race Wars in American History [WI] (3.0 cr)

Senior Capstone Course
The senior 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 senior capstone must be chosen in consultation with the director of undergraduate studies.
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 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• 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 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
• AFRO 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
or 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)
or 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 [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)
• AFRO 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)
Twin Cities Campus
African American and African Studies Minor
African-Amer & African Studies
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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
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 3141 - Africa (3.0 cr)
- AFRO 3204 - History of South Africa to 1910 (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 3543 - Psychology and the Black American Experience (3.0 cr)
- 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 3654 - African Cinema [AH, GP] (4.0 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 - 3.0 cr)
- AFRO 3xxx
- 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 4557 - History of the Field: Development of African American, African, and African Diasporic Studies (3.0 cr)
- AFRO 4910 - Topics in African American and African Studies (1.0 - 3.0 cr)
- AFRO 4xxx
- 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 5551 - Methods: Use of Oral Traditions as Resources for History (3.0 cr)
- AFRO 5625 - Women Writers of Africa and the African Diaspora (3.0 cr)
- AFRO 5876 - Proseminar: Approaches to African Development (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 5xxx
- 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 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)
AFRO 3456 - Social and Intellectual Movements in the African Diaspora [HIS, GP] (3.0 cr)
• AFRO 3265 - History of South Africa from 1910 (3.0 cr)
• HIST 3435 - History of South Africa from 1910 (3.0 cr)
• AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
• GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
• AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
• HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
• APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
• AFRO 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
• HIST 3436 - Contemporary African Conflicts: From Somalia to South Africa (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 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
• HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
• AFRO 3433 - Economic Development in Contemporary Africa [SOCS, GP] (3.0 cr)
• APEC 3061 - Economic Development in Contemporary Africa [GP, SOCS] (3.0 cr)
• AFRO 3436 - Contemporary African Conflicts: From Somalia to South Africa (3.0 cr)
• HIST 3436 - Contemporary African Conflicts: From Somalia to South Africa (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)
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, economics, 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students must choose to specialize in either the General Track or the Language Track. All major coursework must be taken A-F with a grade of C- or better. At least 14 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus.

Student may earn a BA or a minor in American Indian studies, but not both.

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)

Senior Project
Please note that 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:
- 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)

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.

Required Course

Take 1 of the following courses for 3 credits.

AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
or AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)
or POL 1019 - Indigenous Peoples: A Global Perspective [GP] (3.0 cr)

Core Courses

Courses appearing in more than one group may only be used to satisfy one requirement, double-dipping is not allowed. 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 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
or AMIN 5402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)

• AMIN 3303 - American Indians and Photography [AH, DSJ] (3.0 cr)
or AMIN 5303 - American Indians and Photography [AH, DSJ] (3.0 cr)

• AMIN 3301 - American Indian Philosophies [AH, DSJ] (4.0 cr)
or RELS 3321 - American Indian Philosophies [AH, DSJ] (4.0 cr)

Culture and History (Group B)

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

• AMIN 3143 - Language in American Indian Culture and Society (3.0 cr)
• AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (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 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)
• AMIN 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
• AMIN 3872 - American Indian History: 1830 to the Present [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 3871 - American Indian History: Pre-Contact to 1830 [HIS, DSJ] (3.0 cr)
or HIST 3872 - American Indian History: 1830 to the Present [HIS, DSJ] (3.0 cr)
or 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 3501 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
• AMIN 4511 - American Indian Political Economy (3.0 cr)
• AMIN 3141 - American Indian Language Planning (3.0 cr)
or AMIN 5141 - American Indian Language Planning (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: American Indians, Asian Americas & 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 1001 - American Indian Peoples in the United States [DSJ] (3.0 cr)
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 1 or more course(s) totaling 3 or more credit(s) from the following:
- AMIN 3107 - Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
• AMIN 3108 - History of Anishinaabemowin, the Ojibwe Language (3.0 cr)
• AMIN 3109 - Anishinaabe Literature (3.0 cr)
• AMIN 3141 - American Indian Language Planning (3.0 cr)
• AMIN 3143 - Language in American Indian Culture and Society (3.0 cr)
• AMIN 5107 - The Structure of Anishinaabemowin, the Ojibwe Language (3.0 cr)
• AMIN 5109 - Anishinaabe Literature (3.0 cr)
• AMIN 5141 - American Indian Language Planning (3.0 cr)
• DAKO 3125 - Introduction to Dakota Linguistics (3.0 cr)
• DAKO 3126 - Dakota Language for the Classroom (3.0 cr)
• DAKO 3127 - Dakota Language for Teachers (3.0 cr)
• OJIB 3127 - Ojibwe Language for Teachers (3.0 cr)

Electives
Take 6 or more 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 3143 - Language in American Indian Culture and Society (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 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
• AMIN 4511 - American Indian Political Economy (3.0 cr)
• DAKO 3xxx
• DAKO 5xxx
• OJIB 3xxx
• OJIB 5xxx
  • AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
    or POL 1019 - Indigenous Peoples: A Global Perspective [GP] (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] (4.0 cr)
    or RELS 3321 - American Indian Philosophies [AH, DSJ] (4.0 cr)
  • AMIN 3303 - American Indians and Photography [AH, DSJ] (3.0 cr)
  • AMIN 3303 - American Indians and Photography [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)
    or AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
    or GWSS 3412 - 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)
  • 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)
Twin Cities Campus

American Indian Studies Minor

American Indian Studies
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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 bachelor of arts or a minor in American Indian studies, but not both.

Minor Courses
A course that has fulfilled the foundation course requirement cannot also fulfill the electives requirement.

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 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- AMIN 1003 - American Indians in Minnesota [HIS, DSJ] (3.0 cr)

Electives
Take 15 or more 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 3143 - Language in American Indian Culture and Society (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 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 4511 - American Indian Political Economy (3.0 cr)
- AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
- AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- AMIN 3301 - American Indian Philosophies [AH, DSJ] (4.0 cr)
- AMIN 3303 - American Indians and Photography [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 3412 - 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)
- AMIN 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)
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)
**American Studies B.A.**

**American Studies**  
**College of Liberal Arts**

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2016  
- 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](http://www.registrar.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.registrar.umn.edu/academics/degrees-major-minors/requirements). Required courses for the major or minor in which a 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

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

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

Preparatory Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- AMST 1012 - Migrants, Refugees, Citizens, and Exiles: The U.S. on an Immigrant Planet [CIV] (3.0 cr)
- AMST 1401 - Comparative Genders and Sexualities [DSJ] (3.0 cr)
- AMST 1511 - Americans Abroad: Rethinking Travel, Culture, & Empire [GP, HIS] (3.0 cr)
- AMST 1905 - Freshman Seminar (3.0 cr)
- AMST 1xxx
- AMST 2011 - The United States since September 11 [CIV, HIS] (3.0 cr)
- AMST 2021 - Bodies and Their Discontents (3.0 cr)
- AMST 2031 - Chasing the American Dream: Economic Opportunity & Inequality in the U.S. [DSJ, HIS] (3.0 cr)
- AMST 2xxx
- 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)

Major Courses
Other courses may be approved by the director of undergraduate studies.
Take 7 or more course(s) totaling 21 or more credit(s) from the following:
- AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
- AMST 3117 - Latinos in America's Global Cities [SOCS, 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 3713 - Lands and Homelands in the American Indian Great Lakes [HIS, DSJ] (3.0 cr)
- AMST 3920 - Topics in American Studies (1.0 - 5.0 cr)
- AMST 3993 - Directed Studies (1.0 - 9.0 cr)
- AMST 3xxx
- AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- AMST 4xxx
- 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)

Proseminar Sequence
The senior project requirement is fulfilled by completing an original research project within a two semester proseminar led by an American Studies faculty member. The second semester is writing intensive and concludes with a public presentation. Students who chose to complete a senior project in another major still have to complete the AMST Proseminar Sequence.
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.
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)
American Studies Minor
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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
Other courses may be approved by the director of undergraduate studies.
Take 15 or more credit(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 3117 - Latinos in America's Global Cities [SOCS, 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 3713 - Lands and Homelands in the American Indian Great Lakes [HIS, DSJ] (3.0 cr)
- AMST 3920 - Topics in American Studies (1.0 - 5.0 cr)
- AMST 3993 - Directed Studies (1.0 - 9.0 cr)
- AMST 3xxx
- AMST 4301 - Workers and Consumers in the Global Economy [DSJ] (3.0 cr)
- AMST 4xxx
- 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 2016
- 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. Said another way, 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.

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 setting 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a B.A. at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper-division credits outside the major. See your adviser for a list of courses that can or cannot be used to meet this requirement.
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 the following 2 courses for a total of 8 credits.
- 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: archeology; biological anthropology; sociocultural anthropology; linguistic anthropology.
Take 3 or more course(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)
  or ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
  - ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)

- Cultural 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
  - ANTH 4001 - Advanced Method and Theory in Archaeology (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)
  - MEST 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (3.0 cr)
  - ANTH 5008 - Advanced Flintknapping (3.0 cr)
  - ANTH 5009 - Human Behavioral Biology (3.0 cr)
  - ANTH 50xx
  - ANTH 5015W - Biology, Evolution, and Cultural Development of Language [SOCS, WI] (3.0 cr)
  - ANTH 5021W - Anthropology of the Middle East [SOCS, GP, 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 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
• ANTH 5980 - Topics in Anthropology (3.0 cr)
• ANTH 5990 - Topics in Archaeology (3.0 cr)
• ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (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)
• 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 5128 - Anthropology of Education (3.0 cr)
  or OLPD 5128 - Anthropology of Education (3.0 cr)
• ANTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or AMIN 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)

• ANTH 3xxx
  No more than 2 of the 5 upper-division courses in anthropology may be 3xxx-level.
  Take 0 - 2 course(s) from the following:
  • ANTH 3xxx
  • ANTH 3001 - Introduction to Archaeology [SOCS] (4.0 cr)
  • ANTH 3003 - Cultural Anthropology (3.0 cr)
  • EEB 4040 - 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 - 6.0 cr)
• ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (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 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 3308W - Our Genomes, Ourselves: Toward an Anthropology of the New Genetics [TS, SOCS, 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 3027W - Archaeology of Prehistoric Europe [HIS, 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 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  or HIST 3006 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
or ALL 3676 - Culture and Society of India [GP, SOCS] (3.0 cr)
• ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
or AMIN 3602 - Archaeology and Native Americans [DSJ] (3.0 cr)

Senior Project
Choose one of the following two options to complete the senior project.

Option 1
Note: Students should enroll in ANTH 3913 at least one term before registering for ANTH 4013. Honors students should enroll in ANTH 4013H.
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• ANTH 3913 - Senior Project Planning (1.0 cr)
• ANTH 4013 - Senior Project (3.0 cr)
or ANTH 4013H - Senior Honors Thesis Project (3.0 cr)

Option 2
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 4xxx
• ANTH 5xxx

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 cr)
• ANTH 3015W - 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)
• ANTH 5021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• ANTH 3022W - Anthropology of Dreaming and Myth [WI] (3.0 cr)
• ANTH 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
• ANTH 5027W - Archaeology of Prehistoric Europe [HIS, 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 4994W - Directed Research [WI] (1.0 - 6.0 cr)
• ANTH 5031W - Ethnographies of Science [WI] (3.0 cr)
Twin Cities Campus
Anthropology Minor
Anthropology
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• Required credits in this minor: 16

Anthropologists study human communities, near and far, past and present, and explore how seemingly unrelated aspects of a society are connected and how societies are linked to one another.

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 Courses
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
• ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
• ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
  ANTH 1003V - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)

Minor Courses
Take four 3-credit courses that have a common focus. Any ANTH 3xxx-5xxx course may count toward the minor, including special topics.
Take 4 or more 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 3015W - Biology, Evolution, and cultural Development of Language [SOCS, WI] (3.0 cr)
• ANTH 3020 - Topics in the Anthropology of Africa (3.0 - 6.0 cr)
• ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (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 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 3308W - Our Genomes, Ourselves: Toward an Anthropology of the New Genetics [TS, SOCS, 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 4001 - Advanced Method and Theory in Archaeology (3.0 cr)
• ANTH 4003W - Contemporary Perspectives in Cultural Anthropology [WI] (3.0 cr)
• ANTH 4007 - Laboratory Techniques in Archaeology (1.0 - 4.0 cr)
• ANTH 4009W - Warfare and Human Evolution [WI] (3.0 cr)
• ANTH 4019 - Symbolic Anthropology (3.0 cr)

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Information current as of December 01, 2016
• 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 4101 - Archival Analysis for Anthropologists (3.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• MEST 4043 - Romans, Anglo-Saxons and Vikings: Archaeology of Northern Europe (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 5021W - Anthropology of the Middle East [SOCS, GP, 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 5990 - Topics in Anthropology (3.0 cr)
• ANTH 5999 - Topics in Archaeology (3.0 cr)
• 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 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 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
  or GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
  or ALL 3676 - Culture and Society of India [GP, SOCS] (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)
• ANTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or AMIN 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)
• ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
  or ANTH 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
  or HIST 3067W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
• ANTH 5601 - Archaeology and Native Americans [DSJ] (3.0 cr)
  or ANTH 3601 - Archaeology and Native Americans [DSJ] (3.0 cr)
Twin Cities Campus

Art B.A.
Art Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 37
- 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 such areas as drawing, painting, ceramics, printmaking, photography, sculpture, and experimental and media arts.

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

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

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a B.A. at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students who wish to apply credits from art courses taken outside the University of Minnesota should contact the department's undergraduate adviser. At least one upper division (3xxx or above) course in the major must be writing intensive. 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.

Preparatory Courses
Take 15 or more credit(s) from the following:
- Introduction to Contemporary Art and Theory or Art and Life
  Take exactly 1 course(s) from the following:
  - ARTS 1001 - Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
  - ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CiV] (3.0 cr)
- Drawing
  Take exactly 1 course(s) from the following:
  - ARTS 1101 - Drawing [AH] (4.0 cr)
- Three-Dimensional Concepts
  Take exactly 1 course(s) from the following:
  - ARTS 1301 - Sculpture [AH] (4.0 cr)
• ARTS 1801 - Ceramics [AH] (4.0 cr)

**Reproducible Media**
Take exactly 1 course(s) from the following:
• ARTS 1501 - Printmaking: Intaglio and Lithography [AH] (4.0 cr)
• ARTS 1502 - Printmaking: Relief, Screen, and Digital Processes [AH] (4.0 cr)
• ARTS 1601 - Experimental and Media Arts [AH] (4.0 cr)
• ARTS 1701 - Photography: Darkroom & Digital [AH] (4.0 cr)

**Studio Arts**
ARTS 1001 and ARTS 1002 may not count towards the Electives requirement. One of the four upper-division ARTS courses should be taken concurrently with ARTS 3444 to fulfill the senior project.

Take 4 or more course(s) totaling 15 or more credit(s) from the following:

**Lower-Division ARTS**
Take 0 - 1 course(s) from the following:
• ARTS 1xxx

**Upper-Division ARTS**
Take 3 - 4 course(s) from the following:
• ARTS 3xxx
• ARTS 5xxx

**Art History**
Take 2 Art History courses for a total of 6 credits. At least 1 of the 2 Art History courses must be upper-division.

Take 2 or more course(s) totaling 6 or more credit(s) from the following:
Take 0 - 1 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 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
• 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 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3017 - Islamic Culture [AH, GP] (4.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, 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 3422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (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 3940 - Topics in Art History (1.0 - 4.0 cr)
• ARTH 3975 - Directed Museum Experience (1.0 - 2.0 cr)
• ARTH 3993 - Directed Study (1.0 - 4.0 cr)
• ARTH 5112 - Archaic and Classical Greek Art (3.0 cr)
• ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
• ARTH 5301 - Visual Culture of the Atlantic World (3.0 cr)
• ARTH 5302 - Print Culture in Early Modern Europe (3.0 cr)
• ARTH 5323 - Art of the Italian Renaissance: 14th-16th Centuries (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 5422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
• ARTH 5454 - Design Reform in the Era of Art Nouveau (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 5577 - Art of the Harlem Renaissance (3.0 cr)
• ARTH 5766 - Chinese Painting (3.0 cr)
• ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (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)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
  or MEST 3009 - Medieval Art [AH] (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 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)
  or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• ARTH 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)
• ARTH 3208 - Mexico On My Mind [AH, GP] (3.0 cr)
  or CHIC 3208 - Mexico On My Mind [AH, GP] (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 ART 5335 - Baroque Rome: Art and Politics in the Papal Capital (3.0 cr)
  or HIST 3702 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
• ARTH 3355 - African-American Cinema [AH, DSJ] (3.0 cr)
  or ARTH 5355 - African-American Cinema [AH, DSJ] (3.0 cr)
  or AFRO 3655 - African-American Cinema [AH, DSJ] (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 5765 - Early Chinese Art (3.0 cr)
  or ARTH 5775 - Formation of Indian Art: 2500 BCE to 300 CE (3.0 cr)
• ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or AMIN 5802 - Art of the Inka and their Ancestors (3.0 cr)
• RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)
• ARTH 3484 - The Art of Picasso and the Modern Movement (4.0 cr)
  or ART 5484 - The Art of Picasso and the Modern Movement (4.0 cr)

Senior Project
The senior project is completed in the student's final year of coursework. Take ARTS 3444 concurrently with one of the four courses chosen to fulfill the Studio Arts requirement. This course must be an ARTS 3xxx or 5xxx and worth a minimum of 4 credits. Students who double-major and choose to complete the senior project in their other major are still responsible for taking 38 total ARTS credits.
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• ARTS 3444 - 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:
ARTS and ARTH options
These options also fulfill the upper division art history requirement.
Take 0 - 1 course(s) from the following:
• ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
• ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 3014V - Art of India [GP, AH, WI] (4.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• Other options accepted by the department
Take 0 - 1 course(s) from the following:
  • ALL 3356W - Chinese Film [AH, 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 3458W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
  • GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  • GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
  • GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
  • PHIL 3502W - Introduction to Aesthetics [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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 66 to 69
• 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.

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
CLA degrees require students to complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level.

Beginning in Fall 2016, the Art BFA does not have a second language requirement, but students may choose to complete a second language sequence. Consult the Department of Art advisor to find out how this will change your electives requirement.

Students who wish to apply credits from art courses taken outside the University of Minnesota should contact the department's undergraduate advisor. At least one upper division (3xxx or above) course in the major must be writing intensive. 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.

Preparatory Courses
Take 19 or more credit(s) from the following:

Introduction to Contemporary Art and Theory or Art and Life
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ARTS 1001 - Introduction to Contemporary Art and Theory [AH, DSJ] (3.0 cr)
• ARTS 1002 - Art and Life: Thinking About Ethics Through Art [AH, CIV] (3.0 cr)

Drawing
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
• ARTS 1101 - Drawing [AH] (4.0 cr)

Three-Dimensional Concepts
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:

- ARTS 1301 - Sculpture [AH] (4.0 cr)
- ARTS 1801 - Ceramics [AH] (4.0 cr)

**Reproducible Media**

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

- ARTS 1501 - Printmaking: Intaglio and Lithography [AH] (4.0 cr)
- ARTS 1502 - Printmaking: Relief, Screen, and Digital Processes [AH] (4.0 cr)
- ARTS 1601 - Experimental and Media Arts [AH] (4.0 cr)
- ARTS 1701 - Photography: Darkroom & Digital [AH] (4.0 cr)

**1xxx-level Elective**

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

- ARTS 1xxx (4.0 cr)

**Art Electives**

In the final year of studies, a minimum of 8 Art Elective credits must be at the 5xxx level.

Take 30 or more credit(s) from the following:

- Take 0 or more credit(s) from the following:
  - ARTS 3xxx
- Take 8 or more credit(s) from the following:
  - ARTS 5xxx

**Art Internship**

Take 1 of the following courses for at least 1 credit.

- ARTS 3496 - Internship in the Arts (1.0 - 3.0 cr)
- or ARTS 3499 - Internship at Katherine E. Nash Gallery (3.0 cr)

**Critical Theory**

Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:

- ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
- ARTH 3577 - Photo Nation: Photography in America [AH] (3.0 cr)
- ARTH 5417 - Twentieth Century Theory and Criticism (3.0 cr)
- CSCL 1001 - Introduction to Cultural Studies: Rhetoric, Power, Desire [AH, DSJ] (3.0 cr)
- CSCL 1201W - Cinema [AH, WI] (4.0 cr)
- CSCL 1301W - Reading Culture: Theory and Practice [AH, WI] (3.0 cr)
- CSCL 3115 - Cinema and Ideology [AH] (4.0 cr)
- CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)
- CSCL 3456W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
- PHIL 3502W - Introduction to Aesthetics [WI] (3.0 cr)
- CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

**Art History**

Take 3 Art History courses for a total of 9 credits. At least 2 of the Art History Courses must be upper-division.

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

**Lower-division Courses**

- Take 0 - 1 course(s) totaling 0 - 3 credit(s) from the following:
  - ARTH 1xxx

**Upper-division Courses**

- Take 2 - 3 course(s) totaling 6 - 9 credit(s) from the following:
  - ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
  - ARTH 3xxx
  - ARTH 5xxx

**Seminar**

Note that ARTS 5400 is taken in the final fall semester of the B.F.A. program and requires concurrent enrollment in a 5xxx arts course for 4 credits that is part of the required 30 credits of art electives.

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

- ARTS 5400 - Seminar: Concepts and Practices in Art (3.0 cr)

**Senior Project**

B.F.A. candidates register with their faculty adviser and participate in a solo or small group exhibition at an adviser-approved gallery or exhibition space during the final semester. Note that ARTS 5444 is taken the final spring semester of the B.F.A. program and requires concurrent enrollment in a 5xxx arts course for 4 credits that is part of the required 30 credits of art electives. Students must complete ARTS 5400 prior to enrolling in ARTS 5444.

Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• ARTS 5444 - Bachelor of Fine Arts Exhibition (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:

ARTS and ARTH options
Take no more than 1 course(s) from the following:
• ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (3.0 cr)
• ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)

Other options within the major
Take no more than 1 course(s) from the following:
• ALL 3356W - Chinese Film [AH, 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 3211W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3458W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• PHIL 3502W - Introduction to Aesthetics [WI] (3.0 cr)
• CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GWSS 3409W - Asian American Women’s Cultural Production [AH, DSJ, WI] (3.0 cr)
  or AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
Twin Cities Campus
Art History B.A.
Art History
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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; one studio art class is also required for the major. Most classes have no prerequisites. The 31-34-unit credit 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this...
This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

The major consists of nine courses in art history, one course in art, and the senior project, for a minimum of 31 credits. All courses must be taken A-F. A minimum of 13 upper-division credits of major coursework must be taken at the University of Minnesota - Twin Cities campus. No more than three credits of ARTH 3975, 3993, 5993, or 5994 may be used to fulfill major requirements. Students who double-major and choose to complete the senior project in their other major are still responsible for taking 31 total ARTH credits. Students are encouraged to take courses from a variety of instructors to ensure exposure to various approaches and methods.

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 1 of the following courses for at least 3 credits.
- **ARTH 1001** - Introduction to Art History: Prehistoric to Contemporary [AH] (4.0 cr)
- **ARTH 1002W** - Why Art Matters [AH, GP, WI] (4.0 cr)
- **ARTH 1004W** - Introduction to Asian Art [HIS, WI] (3.0 cr)

**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 adviser or director of undergraduate studies.

Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:

- **ARTS 1101** - Drawing [AH] (4.0 cr)
- **ARTS 1102** - Painting (4.0 cr)
- **ARTS 1301** - Sculpture [AH] (4.0 cr)
- **ARTS 1501** - Printmaking: Intaglio and Lithography [AH] (4.0 cr)
- **ARTS 1502** - Printmaking: Relief, Screen, and Digital Processes [AH] (4.0 cr)
- **ARTS 1505** - Papermaking (4.0 cr)
- **ARTS 1601** - Experimental and Media Arts [AH] (4.0 cr)
- **ARTS 1701** - Photography: Darkroom & Digital [AH] (4.0 cr)
- **ARTS 1801** - Ceramics [AH] (4.0 cr)
- **ARTS 1902** - Freshman Seminar (3.0 cr)
- **ARTS 1905** - Freshman Seminar (3.0 cr)
- **ARTS 1910W** - Freshman Seminar [WI] (3.0 cr)

**Art History Electives**

Take 8 courses: six 3xxx and two 5xxx courses, spanning all 3 time periods and 2 geographic/cultural areas. One ARTH 1xxx may be substituted for an ARTH 3xxx course. Up to 3 credits of directed museum experience (ARTH 3975), or directed study (ARTH 3993/5993), or directed research (ARTH 5994) may count. Some courses span across time periods and geographic/cultural areas. Consult with the program adviser or director of undergraduate studies to determine which requirements these courses fulfill.

Take 8 or more 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 5112** - Archaic and Classical Greek Art (3.0 cr)
- **ARTH 3009** - Medieval Art [AH] (3.0 cr)
- **ARTH 3152** - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- **CNES 3152** - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- **ARTH 3162** - Roman Art and Archaeology [HIS] (3.0 cr)
- **CNES 3162** - Roman Art and Archaeology [HIS] (3.0 cr)

**Area: Middle East and/or Islamic World**

Take 0 or more course(s) from the following:
- **ARTH 5192** - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
- **CNES 5192** - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
- **CNES 3182** - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- **ARTH 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)
- **CNES 5185** - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)

**South and/or East Asia**

Take 0 or more course(s) from the following:
• ARTH 5765 - Early Chinese Art (3.0 cr)
• ARTH 5775 - Formation of Indian Art: 2500 BCE to 300 CE (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 5302 - Print Culture in Early Modern Europe (3.0 cr)
• ARTH 5323 - Art of the Italian Renaissance: 14th-16th Centuries (3.0 cr)
• ARTH 5324 - 15th-Century Painting (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)

**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 3005 - American Art [AH] (4.0 cr)
• ARTH 3012 - 19th and 20th Century Art (3.0 cr)
• ARTH 3422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
• ARTH 3484 - The Art of Picasso and the Modern Movement (4.0 cr)
• ARTH 3411 - Gender and Sexuality in Art Since 1863 (3.0 cr)
• ARTH 5417 - Twentieth Century Theory and Criticism (3.0 cr)
• ARTH 5454 - Design Reform in the Era of Art Nouveau (3.0 cr)
• ARTH 5575 - Boom to Bust: American Art from the Roaring Twenties to the Great Depression (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 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)
• ARTH 3208 - Mexico on My Mind [AH, GP] (3.0 cr)
or CHIC 3208 - Mexico On My Mind [AH, GP] (3.0 cr)
• ARTH 3930 - Junior-Senior Seminar (3.0 cr)
or ARTH 3930H - Honors: Junior-Senior Seminar (3.0 cr)
• ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
or AMIN 5802 - Art of the Inka and their Ancestors (3.0 cr)
or RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)
• Directed Museum Experience, Study, or Research
  Take at most 3 credit(s) from the following:
  • ARTH 3975 - Directed Museum 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)

Senior Project
This course encompasses both a once-weekly classroom meeting and independent work overseen by the students individual faculty adviser. To enroll in the course, students need formal permission from the adviser. Typically, students select a research paper previously written in an ARTH 5xxx course and develop it into their senior project. It is recommended that students take their ARTH 5xxx course at least one semester prior to taking ARTH 3971W/V.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• ARTH 3971W - Art History Senior Project [WI] (3.0 cr)
• ARTH 3971V - Honors: Art History Senior Project [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 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• ALL 3014W - Art of India [AH, GP, WI] (4.0 cr)
or ARTH 3014V - Art of India [GP, AH, WI] (4.0 cr)
or ARTH 3014W - Art of India [AH, GP, WI] (4.0 cr)
• ARTH 3971W - Art History Senior Project [WI] (3.0 cr)
• ARTH 3971V - Honors: Art History Senior Project [WI] (3.0 cr)
Twin Cities Campus
Art History Minor
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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
Students must take courses from at least 2 different eras and at least 2 different areas. At least one course must be taken at the 5xxx-level.
Take 5 or more 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
- ARTH 5112 - Archaic and Classical Greek Art (3.0 cr)
- 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)

Area: Middle East and/or Islamic World
Take 0 or more course(s) from the following:
- ARTH 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)
  or CNES 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)

South and/or East Asia
Take 0 or more course(s) from the following:
- ARTH 5765 - Early Chinese Art (3.0 cr)
• ARTH 5775 - Formation of Indian Art: 2500 BCE to 300 CE (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 5302 - Print Culture in Early Modern Europe (3.0 cr)
• ARTH 5323 - Art of the Italian Renaissance: 14th-16th Centuries (3.0 cr)
• ARTH 5324 - 15th-Century Painting (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)

• 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 3422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 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 5411 - Gender and Sexuality in Art Since 1863 (3.0 cr)
• ARTH 5417 - Twentieth Century Theory and Criticism (3.0 cr)
• ARTH 5454 - Design Reform in the Era of Art Nouveau (3.0 cr)
• ARTH 5575 - Boom to Bust: American Art from the Roaring Twenties to the Great Depression (3.0 cr)
• ARTH 5577 - Art of the 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)

• Courses Spanning Across Eras and Areas
Consult the departmental adviser 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 1004W - Introduction to Asian Art [HIS, WI] (3.0 cr)
• ARTH 1921W - Introduction to Film Study [AH, WI] (4.0 cr)
• ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3017 - Islamic Culture [AH, GP] (4.0 cr)
• ARTH 3401 - Art Now [AH, CIV] (3.0 cr)
• ARTH 3422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
• ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
• ARTH 3464 - Art Since 1945 [HIS] (4.0 cr)
• ARTH 3921W - Art of the Film [AH, WI] (4.0 cr)
• ARTH 3930 - Junior-Senior Seminar (3.0 cr)
• ARTH 3940 - Topics in Art History (1.0 - 4.0 cr)
• ARTH 5301 - Visual Culture of the Atlantic World (3.0 cr)
• ARTH 5413 - Alternative Media: Video, Performance, Digital Art (3.0 cr)
• ARTH 5422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
• ARTH 5466 - Contemporary Art (3.0 cr)
• ARTH 5766 - Chinese Painting (3.0 cr)
• ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (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 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or ALL 3014W - Art of India [AH, GP, WI] (4.0 cr)
  or RELS 3322 - 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)
  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)
• ARTH 3208 - Mexico on My Mind [AH, GP] (3.0 cr)
  or CHIC 3208 - Mexico On My Mind [AH, GP] (3.0 cr)
• ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or AMIN 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)
• Take 0 - 1 course(s) from the following:
  • ARTH 3975 - Directed Museum 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 2016
- 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 B.A. or a B.F.A. or a minor.

Concepts in Visual Arts
Take 1 of the following courses for 3 credits. Only one of these courses can count towards the minor requirements.
- ARTS 1001 - 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 Courses
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- ARTS 1101 - Drawing [AH] (4.0 cr)
- ARTS 1301 - Sculpture [AH] (4.0 cr)
- ARTS 1501 - Printmaking: Intaglio and Lithography [AH] (4.0 cr)
- ARTS 1502 - Printmaking: Relief, Screen, and Digital Processes [AH] (4.0 cr)
- ARTS 1601 - Experimental and Media Arts [AH] (4.0 cr)
- ARTS 1701 - Photography: Darkroom & Digital [AH] (4.0 cr)
- ARTS 1801 - Ceramics [AH] (4.0 cr)

Art History
Take 1 or more course(s) from the following:
- ARTS 3401W - Critical Theories and Their Construction From a Studio Perspective [AH, CIV, WI] (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 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
- ARTH 3017 - Islamic Culture [AH, GP] (4.0 cr)
- ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, 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 3422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
- ARTH 3434 - Art and the Environment [AH, ENV] (3.0 cr)
- ARTH 3464 - Art Since 1945 [HIS] (4.0 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 3940 - Topics in Art History (1.0 - 4.0 cr)
- ARTH 3975 - Directed Museum Experience (1.0 - 2.0 cr)
- ARTH 3993 - Directed Study (1.0 - 4.0 cr)
- ARTH 5112 - Archaic and Classical Greek Art (3.0 cr)
- ARTH 5115 - Hellenistic and Iranian Asia: Art and Archaeology of Hellenistic, Scythian, Kushan, and Sogdian Asia (3.0 cr)
- ARTH 5301 - Visual Culture of the Atlantic World (3.0 cr)
- ARTH 5302 - Print Culture in Early Modern Europe (3.0 cr)
• ARTH 5323 - Art of the Italian Renaissance: 14th-16th Centuries (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 5422 - Off the Wall: History of Graphic Arts in Europe and America in the Modern Age (4.0 cr)
• ARTH 5454 - Design Reform in the Era of Art Nouveau (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 5577 - Art of the Harlem Renaissance (3.0 cr)
• ARTH 5666 - Chinese Painting (3.0 cr)
• ARTH 5777 - The Diversity of Traditions: Indian Art 1200 to Present (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 5850 - Topics: Art History (3.0 cr)
• ARTH 5993 - Directed Study (1.0 - 4.0 cr)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
  or MEST 3009 - Medieval Art [AH] (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 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 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)
• ARTH 3208 - Mexico On My Mind [AH, GP] (3.0 cr)
  or CHIC 3208 - Mexico On My Mind [AH, GP] (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 3335 - 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 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
  or CNES 3655 - African-American Cinema [AH, DSJ] (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 5765 - Early Chinese Art (3.0 cr)
  or ARTH 5775 - Formation of Indian Art: 2500 BCE to 300 CE (3.0 cr)
• ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
• AMIN 5802 - Art of the Inka and their Ancestors (3.0 cr)
  or RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)

Electives
ARTS 1001 and ARTS 1002 may not count towards the electives requirement.

Take 3 or more course(s) from the following:
Take 0 - 1 course(s) from the following:
  • ARTS 1xxx
Take 2 - 3 course(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 2016
- 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.

Core Courses

Take 1 or more course(s) from the following:
- AAS 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
  - AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (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)
- 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)
- AAS 3503 - Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
  - SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  - SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  - SOC 3503 - Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
- AAS 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)
  - HIST 3877 - Asian American History, 1850-Present [HIS, DSJ] (3.0 cr)
- AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
  - 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)
- 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)
  - AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (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)
  - AFRO 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)
- 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)
• 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 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 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 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)
• AAS 4232 - American Drama by Writers of Color (3.0 cr)
  or ENGL 4232 - American Drama by Writers of Color (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 2016
- 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-level 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

A minimum of 35 credits are required for the major. 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. All major coursework must be taken A-F and completed with a C- or better. At least 18 of the total 35 credits required for the major must be completed in residence 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
Note: ALL 3001 is offered in the Fall only.
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 credit may NOT be used to fulfill this portion of the ALL and ALL-related Courses requirement.
Take 4-7 course(s) totaling 12 or more credit(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ALL 3232W</td>
<td>&quot;Short&quot; Poetry in China and Japan [WI]</td>
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<tr>
<td>ALL 3261W</td>
<td>Writings in East Asian Cultures: From Oracle Bones to Tattoos [AH, WI]</td>
<td>3.0 cr</td>
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<tr>
<td>ALL 3265W</td>
<td>The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI]</td>
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<tr>
<td>ALL 3334</td>
<td>Voices from Ancient China: The Book of Songs and The Songs of the South [LITR]</td>
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<td>ALL 3336</td>
<td>Revolution and Modernity in Chinese Literature and Culture</td>
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<td>ALL 3337</td>
<td>Contemporary Chinese Literature and Popular Culture [LITR, GP]</td>
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<tr>
<td>ALL 3356W</td>
<td>Chinese Film [AH, WI]</td>
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<tr>
<td>ALL 3361W</td>
<td>Maps, Pictures, and Writing in the Representation of Taiwan [AH, GP, WI]</td>
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<td>ALL 3433W</td>
<td>Traditional Japanese Literature in Translation [LITR, WI]</td>
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<td>ALL 3436</td>
<td>Postwar Japanese Literature in Translation</td>
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<td>ALL 3437</td>
<td>Early 20th Century Japanese Literature in Translation [LITR, GP]</td>
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<tr>
<td>ALL 3441W</td>
<td>Japanese Theater [AH, WI]</td>
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<td>ALL 3456</td>
<td>Japanese Film [GP]</td>
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<td>ALL 3457</td>
<td>War and Peace in Japan Through Popular Culture [AH]</td>
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<td>ALL 3458</td>
<td>Japanese Animation</td>
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<td>ALL 3466</td>
<td>Japanese Popular Culture in a Global Context</td>
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<td>ALL 3467</td>
<td>Science Fiction, Empire, Japan [AH]</td>
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<td>ALL 3468</td>
<td>Environment, Technology and Culture in Modern Japan [ENV]</td>
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<td>ALL 3536</td>
<td>Modern Korean Literature [LITR, GP]</td>
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<td>ALL 3556</td>
<td>Korean Film</td>
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<td>Language &amp; Society of the Two Koreas</td>
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<td>ALL 3586</td>
<td>Cold War Cultures in Korea</td>
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<td>ALL 3651</td>
<td>Ghosts of India [AH]</td>
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<td>ALL 3673</td>
<td>Survey of India: Languages, Literature, and Film [AH, WI]</td>
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<td>ALL 3832</td>
<td>The Politics of Arabic Poetry [LITR, GP]</td>
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<td>Palestinian Literature and Film [AH]</td>
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<td>ALL 3866</td>
<td>Arab American Experiences [AH]</td>
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<td>ALL 3900</td>
<td>Topics in Asian Literature [AH]</td>
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<td>ALL 3920</td>
<td>Topics in Asian Culture [AH]</td>
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<td>ALL 5261</td>
<td>Work of Translation: Theory, Function, and Practice [AH]</td>
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<td>ALL 5276</td>
<td>Liberalism and Its Critics: Global Perspectives</td>
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<td>ALL 5277</td>
<td>Space and Modernity in Asia</td>
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<td>Chinese New Media [AH]</td>
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<td>ALL 5359</td>
<td>Early Shanghai Film Culture [AH]</td>
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<td>ALL 5436</td>
<td>Literature by 20th-Century Japanese Women in Translation</td>
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<td>ALL 5446</td>
<td>Kabuki: A Pop, Queer, and Classical Theater in Japan [AH]</td>
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<td>ALL 5486</td>
<td>Representations and Reimaginations of &quot;Japan&quot;</td>
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<td>ALL 5686</td>
<td>Gender and Sexuality in Modern Arabic Literature</td>
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<td>ALL 5900</td>
<td>Topics in Asian Literature</td>
<td>3.0 cr</td>
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<tr>
<td>ALL 5920</td>
<td>Topics in Asian Culture</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>ALL 3014W</td>
<td>Art of India [AH, GP, WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or ARTH 3014W</td>
<td>Art of India [AH, GP, WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>or RELS 3415W</td>
<td>Art of India [AH, GP, WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>ALL 3371</td>
<td>History of Chinese Cities and Urban Life (AH)</td>
<td>3.0 - 4.0 cr</td>
</tr>
<tr>
<td>or EAS 3479</td>
<td>History of Chinese Cities and Urban Life (AH)</td>
<td>3.0 - 4.0 cr</td>
</tr>
<tr>
<td>or HIST 3479</td>
<td>History of Chinese Cities and Urban Life (AH)</td>
<td>3.0 - 4.0 cr</td>
</tr>
<tr>
<td>or HIST 5479</td>
<td>History of Chinese Cities and Urban Life (AH)</td>
<td>3.0 - 4.0 cr</td>
</tr>
<tr>
<td>ALL 3372</td>
<td>History of Women and Family in China, 1600-2000 [AH]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or HIST 3469</td>
<td>History of Women and Family in China, 1600-2000 [AH]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>ALL 3373</td>
<td>Religion and Society in Imperial China [AH]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or HIST 3466</td>
<td>Religion and Society in Imperial China [AH]</td>
<td>3.0 cr</td>
</tr>
</tbody>
</table>
or RELS 3373 - Religion and Society in Imperial China (3.0 cr)
• ALL 3377: Buddhism in China
  or RELS 3377: Buddhism in China
  • 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 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)
• ALL 3771 - History of Southeast Asia [GP] (3.0 cr)
  or HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
• ALL 3871 - Islam: Religion and Culture (3.0 cr)
  or HIST 3493 - 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)
• CHN 5211 - Introductory Classical Chinese I (3.0 cr)
  or JPN 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)
• ALL 3637W - Modern Indian Literature [WI] (3.0 cr)
  or GLOS 3637W - Modern Indian Literature [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)

• Group B: Other Upper Division Courses

3-credit transfer or study abroad courses may count towards Group B.
Take 0 - 2 course(s) from the following:
• ARAB 3811 - Egyptian Colloquial Arabic I (3.0 cr)
• ARAB 3812 - Egyptian Colloquial Arabic II (3.0 cr)
• ARAB 3900 - Topics in Arabic (3.0 cr)
• ARTH 3013 - Introduction to East Asian Art [GP] (3.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
• GEOG 3145 - The Islamic World [GP, SOCS] (3.0 cr)
• GEOG 3211 - East Asia (3.0 cr)
• GEOG 3212 - Producing India (3.0 cr)
• HIST 3476 - War and Peace in Japan Through Popular Culture (4.0 cr)
• HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
• HIST 3487 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
• HIST 3488 - Hmong History Across the Globe (3.0 cr)
• HIST 3489 - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
• HIST 3490 - 20th Century India (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 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
• POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
• POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
• POL 4477 - Struggles and Issues in the Middle East (4.0 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)
• 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)
or GLOS 3643 - Islam and the West (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:
  • 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)
  • 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 5140 - Readings in Sino-Korean Texts (3.0 cr)
  • KOR 4042 - Advanced Readings in Modern Korean II (4.0 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 3021 - Intermediate Modern Chinese I (5.0 cr)
  • CHN 3022 - Intermediate Modern Chinese II (5.0 cr)
  • HMNG 3021 - Intermediate Hmong I (5.0 cr)
  • HMNG 3022 - Intermediate Hmong II (5.0 cr)
  • HNUR 3021 - Intermediate Hindi-Urdu I (5.0 cr)
  • HNUR 3022 - Intermediate Hindi-Urdu II (5.0 cr)
  • JPN 3021 - Intermediate Japanese I (5.0 cr)
  • KOR 3021 - Intermediate Korean I (5.0 cr)
  • KOR 3022 - Intermediate Korean II (5.0 cr)
• Group C: Other Electives
  Transfer or study abroad credit may count towards Group C. Courses must be worth at least 2 credit.
  Take 0 - 1 course(s) from the following:
  • ALL 1904 - Freshman Seminar (3.0 cr)
  • ALL 1905 - Freshman Seminar (3.0 cr)
  • ALL 1909W - Freshman Seminar [GP, WI] (3.0 cr)
  • ALL 1910W - Freshman Seminar [WI] (3.0 cr)
  • 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:
  • 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)
  • CHN 1016 - Accelerated Intermediate 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)
  • HMNG 1016 - Accelerated Intermediate Hmong (5.0 cr)
  • HNUR 1005 - Conversational Hindi-Urdu (3.0 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)

Major Project
Note: ALL 4900W is offered in the Spring only. Registrants must have senior status or instructor permission to enroll. Double majors who choose to complete the major project in their other major must still meet the minimum 35-credit requirement in ALL.
ALL 4900W - Major Project [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 3441W - Japanese Theater [AH, WI] (3.0 cr)
- ALL 4900W - Major Project [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 [WI] (3.0 cr)
  or GLOS 3637W - Modern Indian Literature [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 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 1016 - Accelerated Intermediate Modern Chinese (5.0 cr)

Advanced Language Courses
Take 2 or more 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)

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:
- HNUR 3031 - Advanced Hindi-Urdu 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 1016 - 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)

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 2016
• 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 take 2 semester(s) of Arabic, or Chinese, or Hindi-Urdu, or Japanese, or Korean, or Hmong.

The ALL minor requires five courses. Students must elect a sub-plan based on their language of concentration. Two courses 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 adviser for final consent. Students who do qualify to substitute the minor language requirement may obtain the minor with 15 credits. Three courses are required from Groups A and B. At least 2 courses must be from Group A. Courses from Group B are optional.

All required coursework must be taken A-F, and students must earn a grade of C- or better.

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 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 (3.0 cr)
• ALL 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)
• ALL 3338 - 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 3436 - Postwar Japanese Literature in Translation (3.0 cr)
• ALL 3437 - Early 20th Century Japanese Literature in Translation [LITR, GP] (3.0 cr)
• ALL 3441W - Japanese Theater [AH, WI] (3.0 cr)
• ALL 3456 - Japanese Film [GP] (3.0 cr)
• ALL 3457 - War and Peace in Japan Through Popular Culture (4.0 cr)
• ALL 3458 - Japanese Animation (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 (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 (3.0 cr)
• ALL 3673 - Survey of India: Languages, Literature, and Film (3.0 cr)
• ALL 3856 - Palestinian Literature and Film (3.0 cr)
• ALL 3866 - Arab American Experiences (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 - Representations and Reimaginings 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)
• ALL 5xxx
• 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 - Representations and Reimaginings 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)
• ALL 5xxx
• 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)
• 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: Buddhism in China
  or RELS 3377: Buddhism in China
• ALL 3476 - 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 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)
• ALL 3771 - History of Southeast Asia [GP] (3.0 cr)
  or HIST 3485 - History of Southeast Asia [GP] (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 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)
• ALL 3637W - Modern Indian Literature [WI] (3.0 cr)
  or GLOS 3637W - Modern Indian Literature [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)

• Group B: Other Upper Division Courses
3-credit transfer or study abroad courses may count towards Group B. See departmental adviser or DUS for final approval.

Take 0 - 1 course(s) totaling 0 - 5 credit(s) from the following:

- **ARAB 3811** - Egyptian Colloquial Arabic I (3.0 cr)
- **ARAB 3812** - Egyptian Colloquial Arabic II (3.0 cr)
- **ARAB 3900** - Topics in Arabic [GP] (3.0 cr)
- **ARTH 3013** - Introduction to East Asian Art [GP] (3.0 cr)
- **ARTH 3015W** - Art of Islam [AH, GP, WI] (4.0 cr)
- **ARTH 3764** - Art & Archaeology of Korea: An Introductory Survey (3.0 cr)
- **GEOG 3145** - The Islamic World [SOCS, GP] (3.0 cr)
- **GEOG 3211** - East Asia (3.0 cr)
- **GEOG 3212** - Producing India (3.0 cr)
- **GEOG 3212** - or
- **HIST 3476** - War and Peace in Japan Through Popular Culture (4.0 cr)
- **HIST 3477** - Samurai, Geisha, and How They Became Japanese (3.0 cr)
- **HIST 3478** - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
- **HIST 3483** - Hmong History Across the Globe (3.0 cr)
- **HIST 3486** - Hmong Refugees from the Secret War: Becoming Americans (3.0 cr)
- **HIST 3489** - 20th Century India (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 3547** - The Ottoman Empire [HIS, GP] (3.0 cr)
- **POL 4465** - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
- **POL 4473W** - Chinese Politics [GP, WI] (3.0 cr)
- **POL 4477** - Struggles and Issues in the Middle East (4.0 cr)
- **EAS 3461** - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
  or **HIST 3461** - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
  or **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)
  or **HIST 3462H** - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
  or **EAS 3462H** - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
- **HIST 3513** - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
  or **RELS 3762** - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
  or **RELS 5762** - 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)
  or **GLOS 3643** - Islam and the West (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:

- **CHN 3021** - Intermediate Modern Chinese I (5.0 cr)
- **CHN 3022** - Intermediate Modern Chinese II (5.0 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)
- **HMNG 3021** - Intermediate Hmong I (5.0 cr)
- **HMNG 3022** - Intermediate Hmong II (5.0 cr)
- **HNUR 3021** - Intermediate Hindi-Urdu I (5.0 cr)
- **HNUR 3022** - Intermediate Hindi-Urdu II (5.0 cr)
- **JPN 3021** - Intermediate Japanese I (5.0 cr)
- **JPN 3022** - Intermediate Japanese II (5.0 cr)
- **JPN 4041** - Advanced Japanese Conversation and Composition I (4.0 cr)
- **JPN 4042** - Advanced Japanese Conversation and Composition II (4.0 cr)
- **JPN 5040** - Readings in Japanese Texts (3.0 cr)
- **KOR 3021** - Intermediate Korean I (5.0 cr)
- **KOR 3022** - Intermediate Korean II (5.0 cr)
- **KOR 4041** - Advanced Readings in Modern Korean I (4.0 cr)
- **KOR 5140** - Readings in Sino-Korean 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:
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 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 2 or more course(s) totaling 7 or more credit(s) from the following:
- CHN 1016 - 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 2 or more 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)
- HNUR 3031 - Advanced Hindi-Urdu 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)
- 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 1016 - 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)

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 2 or more 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 2 or more 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 49 to 51
- 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 6 courses before admission to the program.

Note: the following courses do not factor into the overall credit total for the major.

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

Required prerequisites
Mathematics
Complete one pair of courses from the following sequence.
Calculus Sequence I
- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
or
Calculus Sequence II
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- MATH 1372 - CSE Calculus II (4.0 cr)
or
Calculus Honors Sequence
- MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
- MATH 1572H - Honors Calculus II (4.0 cr)
Complete one course in either Linear Algebra or Multivariable Calculus from the following sequences.
Linear Algebra
- 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)
or
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)

Preparatory Physics
Complete three courses from either physics sequence.
Physics Sequence
- 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)
- PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
or
Physics Honors Sequence
- PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
- PHYS 1402V - Honors Physics II [PHYS, WI] (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 4 semester(s) or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

AST 1011H is recommended but not required. The number of credits in the major varies by area of interest, but requires at least 15 credits of AST courses.

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.

Major Courses
Each of the different areas of interest has the same core math, physics, and astrophysics requirements. Curriculum details for the different areas--secondary education, science writing, science policy, and scientist--are developed by the student in consultation with an adviser.

Astrophysics Requirement
- AST 2001 - Introduction to Astrophysics (4.0 cr)
- AST 4001 - Astrophysics I (4.0 cr)
- AST 4002 - Astrophysics II (4.0 cr)

Physics Requirement
- PHYS 2201 - Introductory Thermodynamics and Statistical Physics (3.0 cr)
- PHYS 2601 - Quantum Physics (4.0 cr)
- PHYS 2605 - Quantum Physics Laboratory (3.0 cr)
- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (4.0 cr)

Mathematics Requirement
Take a minimum of four credits.
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
  or MATH 4xxx
  or MATH 5xxx

Technical Electives
Take 12 or more credit(s) from the following:
- •AST 4xxx
- •AST 5xxx

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] (3.0 - 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] (3.0 - 5.0 cr)
- •MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 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 2016
- 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 B.A. or a B.S. or a minor.

Math
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)

Physics
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)
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
or PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
or PHYS 2503H - Honors Physics III (4.0 cr)

Minor Courses
AST 2001 - Introduction to Astrophysics (4.0 cr)
Take 1 or more course(s) from the following:
- AEM 4301 - Orbital Mechanics (3.0 cr)
- AEM 4501 - Aerospace Structures (3.0 cr)
- PHYS 3022 - Introduction to Cosmology (3.0 cr)
- PHYS 4051 - Methods of Experimental Physics I (5.0 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)
- AST 4xxx
- AST 5xxx
**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 2016
- 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 take 4 semester(s) of German.

The minor consists of a minimum of five courses and 16 credits. Students should take 3xxx, and 5xxx courses with no more than one course being a directed or independent study. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the German program at the University of Minnesota - Twin Cities campus. 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. The minor program must be approved by the director of undergraduate studies.

**Minor 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:
- GSD 3511W - Vikings, Knights, and Reformers: German and European Culture and Controversies to 1700 [WI] (3.0 cr)
- GSD 3512W - Imagined Communities: German and European, Culture and Controversies, 1700 to Present [WI] (3.0 cr)
- CSCL 3412W - Psychoanalysis 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 - Women, Revolution, and War in 20th Century Europe (3.0 cr)
- HIST 3729 - Nazi Germany and Hitler's Europe (3.0 cr)
- HIST 3746 - Game of Thrones: Emperors, Knights and Witches in Central Europe (3.0 cr)
• HSCI 3611 - Enlightenment, Revolution, and the Rise of Modern Science [HIS, GP] (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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 50
• Degree: Bachelor of Individualized Studies

The BIS provides flexibility in a student's degree program by allowing him or her to focus coursework on three areas, one of which may consist of courses outside CLA. The areas do not have to be related to each other, but the program proposal must explain how the areas of study connect to the student's overall educational goals.

Working closely with a BIS advisor, students develop a written proposal and course list. The proposal must be approved by a committee and three faculty or department advisors with expertise in the areas of concentration. Some departments and colleges have prerequisite or required courses for concentrations based in those departments and colleges in their BIS program.

For specific information on proposal procedures and on department and college guidelines, see the Individualized Degree Programs website https://cla.umn.edu/academics-experience/majors-minors/individualized-degree-programs

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

Admission Requirements
For certain concentrations, prerequisite courses must be completed before submitting a program proposal. For certain concentrations, a minimum overall GPA or a minimum tool course GPA is required before a student can submit a program proposal.

Students can declare the degree after attending an information session (held two to three times a week) and preparing a preliminary course list. Students are not approved for the degree until they have submitted a program proposal (the submission deadline is once per semester) and the proposal has been approved by a committee and faculty or department advisors.

See a BIS advisor for more information.

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

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

Program Requirements
Students are required to take 4 semester(s) of any second language.

Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper-division credits outside the major.

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. At least one upper-division (3xxx-level or above) course in the major must be writing intensive.

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.

**Major Courses**
- First Concentration Area
- Second Concentration Area
- Third Concentration Area

Senior paper: 2,500-word analytic paper written in conjunction with a CLA course in the B.I.S. program.
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 2016
- 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.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

No course may be used to fulfill more than one major requirement. Students who double major and choose to complete the senior project requirement in their other CLA major must take an appropriate 4-credit upper division CNES elective in substitution for the CNES senior project course.

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

Preparatory Courses
Students must complete an introductory course, plus the first year of Hebrew or Greek. Note: students who chose to take CNES/RELS 1201 to fulfill the Introductory Course Req. will not be able to take the CNES/JWST/RELS 3201 to fulfill the Major Courses Req. All five courses are equivalent and credit cannot be granted for more than one version of the course. The 3xxx courses may count as an Introductory Course or as a Major Course, but the 1xxx courses may only count as an Introductory Course. Take 1 - 5 course(s) totaling 3 - 21 credit(s) from the following:

Introductory Course
Take 1 of the following courses for at least 3 credits.

- CNES 1001 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
- or RELS 1003 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
- or CNES 1082 - Jesus in History [HIS] (3.0 cr)
- or CNES 1082H - Honors Course: Jesus in History [HIS] (3.0 cr)
- or RELS 1082 - Jesus in History [HIS] (3.0 cr)
- or RELS 1082H - Honors Course: Jesus in History [HIS] (3.0 cr)
- or 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)
- or Other intro course may be taken with DUS approval.

• Hebrew or Greek

Take either the Hebrew or Greek 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:

• 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)
• 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)

Major Courses

Take 1 of the following courses for 4 credits.

• GRK 3004 - Intermediate Greek Poetry (4.0 cr)
• or HEBR 3102 - Intermediate Biblical Hebrew II (4.0 cr)

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, HEBR 3200/5200, 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-requirement(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)
• 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 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 cr)
• LAT 5100 - Advanced Reading (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)
• or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
• CNES 3202 - Prophecy in Ancient Israel (3.0 cr)
• or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
• or RELS 3202 - Prophecy in Ancient Israel (3.0 cr)
• CNES 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
• or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
• or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (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)
• 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 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
• or HIST 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
•CNES 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or JWST 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or RELS 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or CNES 5504 - Ancient Jewish Culture and Identity (3.0 cr)
•RELS 5504 - Development of Israelite Religion II (3.0 cr)

•New Testament and Early Christianity
Take 0 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)
•CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
•CNES 3107 - Age of Constantine the Great (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 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 New Testament (3.0 cr)
or CNES 5072 - The New Testament (3.0 cr)
or RELS 3072 - The New Testament (3.0 cr)
or RELS 5072 - The New Testament (3.0 cr)
•CNES 3073 - Roman Religion and Early Christianity (3.0 cr)
or RELS 3073 - Roman Religion and Early Christianity (3.0 cr)
•CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
•CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
•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 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (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 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
or ARTH 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (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)

•Early Judaism
Take 0 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)
•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)
•CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
•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 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
•CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 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)
• CNES 3204 - The Dead Sea Scrolls (3.0 cr)
  or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
  or RELS 3204 - Dead Sea Scrolls (3.0 cr)
  or RELS 5204 - Dead Sea Scrolls (3.0 cr)
• CNES 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
  or ARTH 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 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 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
  or 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)
  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 New Testament (3.0 cr)
  or CNES 5072 - The New Testament (3.0 cr)
  or RELS 3072 - The New Testament (3.0 cr)
  or RELS 5072 - The New Testament (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 - Dead Sea Scrolls (3.0 cr)
  or RELS 3204 - Dead Sea Scrolls (3.0 cr)
  or RELS 5204 - Dead Sea Scrolls (3.0 cr)
• CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or CNES 5502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
  or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)

Senior Project
Take the following 1 course for 4 credits.
CNES 3951W - Major Project [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 3951W - Major Project [WI] (4.0 cr)

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Information current as of December 01, 2016
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 2016
• 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
Preparatory Courses
Students must complete an introductory course, plus the first year of Greek or Hebrew before declaring the minor. Note: students who chose to take CNES/RELS 1201 to fulfill the Introductory Course Req. will not be able to take the CNES/JWST/RELS 3201 to fulfill the Major Courses Req. The 3xxx courses may count as an Introductory Course or as a Major Course, but the 1xxx courses may only count as an Introductory Course.
Take 1 - 3 course(s) totaling 3 - 13 credit(s) from the following:
Introductory Course
Take 1 of the following courses for at least 3 credits.

CNES 1001 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
or RELS 1003 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
or CNES 1082 - Jesus in History [HIS] (3.0 cr)
or CNES 1082H - Honors Course: Jesus in History [HIS] (3.0 cr)
or RELS 1082 - Jesus in History [HIS] (3.0 cr)
or 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)
or Other intro course may be taken with DUS approval.

•First-Year Hebrew or Greek
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 both of these courses. Placement is determined by the Greek and Hebrew 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)
• HEBR 1101 - Beginning Biblical Hebrew I (5.0 cr)
• HEBR 1102 - Beginning Biblical Hebrew II (5.0 cr)

Minor Requirements
Students are required to take 2 semester(s) of Greek or Hebrew.

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, HEBR 3200/5200, 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-requirement(s) from the following:

### Hebrew Bible

- AKKA 5011 - Elementary Akkadian I (3.0 cr)
- AKKA 5012 - Elementary Akkadian II (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 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 cr)
- LAT 5100 - Advanced Reading (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)
- or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- CNES 3202 - Prophecy in Ancient Israel (3.0 cr)
- or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
- or RELS 3202 - Prophecy in Ancient Israel (3.0 cr)
- CNES 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
- or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
- or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (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)
- 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 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
- or HIST 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
- CNES 3072 - The New Testament (3.0 cr)
- or CNES 5072 - The New Testament (3.0 cr)
- or RELS 3072 - The New Testament (3.0 cr)
- or RELS 5072 - The New Testament (3.0 cr)
- CNES 3073 - Roman Religion and Early Christianity (3.0 cr)
- or RELS 3073 - Roman Religion and Early Christianity (3.0 cr)
- CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
- or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
- CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
• ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

• CNES 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or JWST 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
  or RELS 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)

• CNES 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
  or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
  or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (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 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 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
  or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
  or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (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 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)

• CNES 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
  or ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)

• 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 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
  or JWST 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
  or RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (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)

• REFS 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 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

• CNES 5204 - The Dead Sea Scrolls (3.0 cr)
  or RELS 5204 - Dead Sea Scrolls (3.0 cr)
  or RELS 5204 - Dead Sea Scrolls (3.0 cr)

• CNES 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
  or ARTH 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (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 2016
• 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

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 Disciplinary Perspectives 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)

Disciplinary Perspectives

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:

- GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- PHIL 1003W - Introduction to Ethics [CIV, WI] (4.0 cr)
- PHIL 1006W - Philosophy and Cultural Diversity [AH, DSJ, WI] (4.0 cr)
- ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
- PHIL 1006W - Philosophy and Cultural Diversity [AH, DSJ, WI] (4.0 cr)
- or PHIL 1026W - Philosophy and Cultural Diversity [AH, DSJ, WI] (3.0 cr)
- SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
- or SOC 1011V - Honors: Introduction to Sociology [SOCS, DSJ, WI] (4.0 cr)

Required Courses

Take 6 required courses for a total of 19-24 credits, by completing three Biosciences courses, two Science & Society courses, and one Science & Society Methods course.

Required Biosciences Courses

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

BIOL 1009 - General Biology [BIOL] (4.0 cr)

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

- Genetics
  - BIOL 4003 - Genetics (3.0 cr)
  - or GCD 3022 - Genetics (3.0 cr)
- Cell Biology
  - GCD 3033 - Principles of Cell Biology (3.0 cr)
- Ecology
  - EEB 3407 - Ecology (3.0 cr)
  - or EEB 3408W - Ecology [WI] (3.0 cr)
  - or BIOL 3807 - Ecology (4.0 cr)
- Evolution
  - EEB 3409 - Evolution (3.0 cr)
  - or BIOL 3809 - Evolution in Lab and Field (4.0 cr)

Required Science & Society Courses

Take 2 courses for a total of 6-8 credits. Each course must be from a different department (e.g., BSE & PHIL). Take PHIL 1005/1005H only prior to completing 90 credits and PHIL 4607 after completing 60 credits.

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

- ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
- BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
- CSCL 3331 - Science and Culture [AH] (3.0 cr)
- or CSCL 3361 - 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 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
• 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 Science & Society Methods course for 3-4 credits. Some courses are only available to students completing majors and minors in particular departments.
Take 1 or more course(s) from the following:
Quantitative Methods
Take 0 or more course(s) from the following:
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
• PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
• SOC 3811 - Social Statistics [MATH] (4.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
or STAT 3021 - Introduction to Probability and Statistics (3.0 cr)
or PSY 3801H - Honors 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 [WI] (4.0 cr)

Research Methods in History of Science & Medicine
Take 0 or more course(s) from the following:
• HSCI 3401 - Ethics in Science and Technology [HIS, CIV] (3.0 cr)
• HSCI 4455 - Women, Gender, and Science [HIS, DSJ] (3.0 cr)
• HMED 3002W - Health Care in History II [HIS, WI] (3.0 cr)
• HMED 3040 - Human Health, Disease, and the Environment in History [HIS] (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)
• HMED 3055 - Women, Health, and History [HIS] (3.0 cr)
• HSCI 5244 - History of Ecology and Environmentalism (3.0 cr)
or HSCI 3244 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)

Supporting Sciences Required Courses:
Take 6 Supporting Sciences Required 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 | [PHYS, WI] (5.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering | [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics | [PHYS, WI] (4.0 cr)
or PHYS 1101W - Introductory College Physics | [PHYS, WI] (4.0 cr)

Elective Courses
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)
- CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- 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)
- PBIO 4321 - Minnesota Flora (3.0 cr)
- PBIO 4404 - Developmental Plant Anatomy (3.0 cr)
- PBIO 4511 - Flowering Plant Diversity (3.0 cr)
- PBIO 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)
- EEB 4811 - Biogeochemical Processes (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] (3.0 cr)
  or BIOL 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)
  • ANTH 4329 - Primate Ecology and Social Behavior (3.0 cr)
  • EEB 4129 - Mammalogy (4.0 cr)
  • EESCI 4102W - Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates [WI] (3.0 cr)
  • EESCI 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 BIOL 3809 - Evolution in Lab and Field (4.0 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)
  • 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 4329 - Primate Ecology and Social Behavior (3.0 cr)
  • EEB 3411 - Introduction to Animal Behavior (3.0 cr)
  or BIOL 3811 - Introduction to Animal Behavior (4.0 cr)

• Microbial Biology
  Take 0 or more course(s) from the following:
  • MICB 4111 - Microbial Physiology and Diversity (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)
  • MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
  • ESCI 4801 - Geomicrobiology (3.0 cr)
  • MICB 3301 - Biology of Microorganisms (5.0 cr)
    or VBS 2032 - General Microbiology With Laboratory (5.0 cr)
  • BIOL 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
  • MICB 4131 - Immunology (3.0 cr)
    or VPM 4131 - Immunology (3.0 cr)
  • MICB 4141W - Biology, Genetics, and Pathogenesis of Viruses: Writing Intensive [WI] (4.0 cr)
    or MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)

• Plant Breeding & Agronomy
  Take 0 or more course(s) from the following:
  • HORT 3005 - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
  • HORT 4071W - Applications of Biotechnology to Plant Improvement [WI] (4.0 cr)
  • HORT 4401 - Plant Genetics and Breeding (4.0 cr)
    or AGRO 4401 - Plant Genetics and Breeding (4.0 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 3331 - Science and Culture [AH] (3.0 cr)
  • CSCL 3361 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)
  • CSCL 3458W - 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 [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 4450 - 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:
  • AFRO 3141 - Africa (3.0 cr)
  • 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>GLOS 3303</td>
<td>Environment and Development in the Third World [SOCS, ENV]</td>
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<td>GEOG 3411W</td>
<td>Geography of Health and Health Care [WI]</td>
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<td>GEOG 3381W</td>
<td>Population in an Interacting World [SOCS, GP, WI]</td>
<td>4.0 cr</td>
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<tr>
<td>GLOS 3701W</td>
<td>Population in an Interacting World [SOCS, GP, WI]</td>
<td>4.0 cr</td>
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**Health & Environmental Policy**

Take no more than 3 course(s) from the following:

- BSE 3361W - Geography and Public Policy [WI] (3.0 cr)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)

**Health & Environmental Policy**

- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)

**Health & Environmental Policy**

- AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
- AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
- 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)
- 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] (3.0 cr)
- HMED 3035 - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
- HMED 3055 - Women, Health, and History [HIS] (3.0 cr)
- HMED 3065 - Body, Soul, and Spirit in Medieval and Renaissance European Medicine (3.0 cr)
- HMED 3075 - Understanding and Medicine in Modern America [HIS, TS] (3.0 cr)
- HSCI 2333V - Honors Course: Science and Technology in the American Century [HIS, CIV, WI] (3.0 cr)
- HSCI 3211 - Biology and Culture in the 19th and 20th Centuries [HIS, CIV] (3.0 cr)
- HSCI 3242 - The Darwinian Revolution [HIS] (3.0 cr)
- HSCI 3244 - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)
- HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
- HSCI 3332 - Science and American Culture [HIS, DSJ] (3.0 cr)
- HSCI 3341 - Ethics in Science and Technology [HIS, CIV] (3.0 cr)
- HSCI 3815 - Revolutions in Science: Lavoisier, Darwin, and Einstein [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 [WI] (4.0 cr)
- PHIL 3305 - Medical Ethics (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)

**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)
or PSY 5135 - Psychology of Individual Differences (3.0 cr)
•NURS 2001 - Human Growth and Development: A Life Span Approach (3.0 cr)
or NURS 3690 - Life Span, Growth, and Development I (2.0 cr)
•NURS 3691 - Life Span, Growth, and Development II (1.0 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 - Health and Human Rights (3.0 cr)
•PUBH 3807 - Global Health, Relief, Development and Religious and Non-religious NGOs (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] (4.0 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)
or SOC 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 - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
•SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
or GLOS 4305 - 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)
or BTHX 5900 - Independent Study in Bioethics (1.0 - 4.0 cr)
or CSCL 4993 - Directed Study (1.0 - 3.0 cr)
or GLOS 5994 - Directed Research (1.0 - 4.0 cr)
or GWSS 4994 - Directed Research (1.0 - 8.0 cr)
or HSCI 5993 - Directed Studies (1.0 - 15.0 cr)
or HSCI 5994 - Directed Research (1.0 - 15.0 cr)
or PHIL 3993 - Directed Studies (1.0 - 3.0 cr)
or POL 4970 - Individual Reading and Research (1.0 - 4.0 cr)
or PSY 4993 - Directed Research: Special Areas of Psychology and Related Sciences (1.0 - 6.0 cr)
or PUBH 3093 - Directed Study: Public Health (1.0 - 4.0 cr)
or PUBH 3893 - Directed Study: Health Services Research and Policy (1.0 - 4.0 cr)
or SOC 4093 - Directed Study (1.0 - 4.0 cr)

•c) Biosciences Project
Students supervised by faculty members appointed in College of Biological Sciences or other UMNTC colleges register for a
minimum of 3 credits in a directed studies/research course. Follow procedures of that college.

or Option 2: Senior Project Seminar
Contact instructor prior to registration of these courses; seats are limited.
Take 1 or more course(s) totaling 2 - 4 credit(s) from the following:
•HMED 4960 - Senior Research Topics in Medical History (3.0 - 4.0 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)

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 - Biogeochemical Processes (4.0 cr)
•ENT 4251 - Forest and Shade Tree Entomology (3.0 cr)
•FW 4101 - Herpetology (4.0 cr)
•FW 4136 - Ichthyology (4.0 cr)
•GEOG 3839 - Introduction to Dendrochronology (3.0 cr)
•MICB 3301 - Biology of Microorganisms (5.0 cr)
•MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
•MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
•NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
•PBIO 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] (3.0 cr)
or BIOL 3807 - Ecology (4.0 cr)
or EEB 3409 - Evolution (3.0 cr)
or BIOL 3809 - Evolution in Lab and Field (4.0 cr)

•Courses Requiring Concurrent Registration with a Laboratory Course
Take 0 - 2 course(s) from the following:
Students taking ANAT 3601 or 3611 must concurrently register for ANAT 3602, 3608H, or 3612
ANAT 3601 - Principles of Human Anatomy (3.0 cr)
or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
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)
• 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)
or BIOL 2007 - Marine Animal Diversity Laboratory (2.0 cr)
• BIOL 3002 - Plant Biology: Function (2.0 cr)
BIOL 3005W - Plant Function Laboratory [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. 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 3458W - 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 3613W - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• GLOS 3613V - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
• GWSS 3002W - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
• GWSS 3002W - 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] (3.0 cr)
• PHIL 3005W - General History of Western Philosophy: Modern Period [AH, WI] (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)
• PHIL 3601W - Scientific Thought [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] (4.0 cr)
• WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)
Twin Cities Campus
Chemistry B.A.
Chemistry
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• 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
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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

Mathematics
Take 3 courses for 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)

Physics
Take 2 courses for 8-10 credits.
Preparatory Courses
Take 6 courses for 13 credits.

CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 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 Laboratory [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)

Major Courses
Take 6 courses for 19-20 credits.

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)
CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
CHEM 2311 - Organic Lab (4.0 cr)
CHEM 2312H - Honors Organic Lab (5.0 cr)
CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
CHEM 4701 - Inorganic Chemistry (3.0 cr)

Advanced Chemistry Laboratory Electives or Research
Take two advanced chemistry electives for a total of 4-9 credits. Only one directed study may count (CHEM 2094 or 4094W or 4094V), and must be taken for a minimum of 2 credits. If directed study is chosen, honors students should enroll in 4094V.

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

• CHEM 4311W - Advanced Organic Chemistry Lab [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)
• CHEM 4423W - Foundations of Chemical Biology Laboratory [WI] (2.0 cr)
• CHEM 2094 - Directed Research (1.0 - 3.0 cr)
• CHEM 4094W - Directed Research [WI] (1.0 - 5.0 cr)
• CHEM 4094V - 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
• MATS 3xxx
• MATS 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:

- 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
Chemistry
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• 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
Credits from seminars or special topics courses may not be applied toward the minor. A maximum of two credits of directed study may be applied. At least five credits (two courses) must be completed at the University of Minnesota - Twin Cities campus.

Students may complete no more than one degree in the Chemistry program: a BA or a BS or a minor.

Minor Courses
Take 15 - 16 credit(s) from the following:
Take 10-11 credits of Organic Chemistry:
• 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 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
• CHEM 2312H - Honors Organic Lab (5.0 cr)
  or CHEM 2311 - Organic Lab (4.0 cr)
• Take 5 or more credit(s) from the following:
  • CHEM 2xxx
  • CHEM 3xxx
  • CHEM 4xxx
  • CHEM 5xxx
**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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 36 to 57
- 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 4 semesters of the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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. Courses at 3xxx offer more focused opportunities to examine history, society, culture, literature, and gender. Majors must also complete a senior paper.

Students may earn a BA and a minor in Chicano-Latino studies, but not both.

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

**Core Requirements**

Take 5 or more course(s) totaling 15 or more credit(s) from the following:

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Information current as of December 01, 2016
• CHIC 1112 - Introduction to Chicana/o Studies: Critical Paradigms [DSJ] (3.0 cr)
• CHIC 1275 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
or CHIC 3275 - Service Learning in the Chicano/Latino Community [CIV] (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 U.S.: Families, Work, and Advocacy [CIV] (4.0 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 3213 - Chicano Music and Art [AH, 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 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 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)

Electives
Take a total of 18 elective credits, of which at least 15 must be taken at the 3xxx-level or above. 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. Any course taken in fulfillment of the Core sub-requirement may not count toward the Electives sub-requirement.

Take 18 or more credit(s) from the following:
• 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 3352 - Transnational Chicana/o Theory: Global Views/Borderland Spaces (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 3xxx
• CHIC 4275 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
• CHIC 4xxx
• CHIC 5xxx
• 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)
or 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)
or CHIC 5374 - Migrant Farmworkers in the U.S.: Families, Work, and Advocacy [CIV] (4.0 cr)
• CHIC 3425 - History of Modern Mexico (3.0 cr)
or HIST 3425 - History of Modern Mexico (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 3993 - Directed Studies (1.0 - 9.0 cr)
or CHIC 5993 - Directed Studies (1.0 - 3.0 cr)
• CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
or POL 3752 - Chicana/o Politics [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)
• CHIC 3900 - Topics in Chicano Studies (3.0 cr)
or CHIC 5920 - Topics in Chicana(o) Studies (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, & 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 GLBT 4232 - Chicana/o - Latina/o Gender and Sexuality Studies [AH, DSJ] (3.0 cr)
or CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
or GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
or CHIC 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
or AMST 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)

Senior Project
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
- 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 2016
* 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 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 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 4275 - Theory in Action: Community Engagement in a Social Justice Framework [CIV] (3.0 cr)
- CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
  or CHIC 5374 - Migrant Farmworkers in the U.S.: Families, Work, and Advocacy [CIV] (4.0 cr)
- CHIC 3423 - Central American Revolutions (3.0 cr)
  or HIST 3423 - Central American Revolutions (3.0 cr)
- CHIC 3425 - History of Modern Mexico (3.0 cr)
  or HIST 3425 - History of Modern Mexico (3.0 cr)
- CHIC 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 3993 - Directed Studies (1.0 - 9.0 cr)
  or CHIC 5993 - Directed Studies (1.0 - 3.0 cr)
- CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
  or POL 3752 - Chicana/o Politics [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)
- CHIC 3900 - Topics in Chicano Studies (3.0 cr)
  or CHIC 5920 - Topics in Chicano(o) Studies (3.0 cr)
- ARTH 3208 - Mexico on My Mind [AH, GP] (3.0 cr)
  or CHIC 3208 - Mexico On My Mind [AH, GP] (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)
- 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)

• 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)

• CHIC 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
or AMST 3752 - Chicanas and Chicanos in Contemporary Society [DSJ] (3.0 cr)
Child Psychology B.A.

Program Type: Baccalaureate
Requirements for this program are current for Fall 2016
Required credits to graduate with this degree: 120
Required credits within the major: 37 to 40
Degree: Bachelor of Arts

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 nor apply psychology, educational psychology, or child and adolescent psychiatry credits to the minimum 18 upper-level credits required outside the major. These credits fall neither inside nor outside the major.

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 2 courses before admission to the program.

An introduction to psychology course must be completed before admission into the major. Students may formally declare the major with CPSY 2301 in progress.

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

Required prerequisites
Preparatory Courses
Introduction to Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
Introduction to Child Psychology
CPSY 2301 - Introduction to Child Psychology (4.0 cr)
or CPSY 3301 - Introduction to Child Psychology for Social Sciences (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.

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.
CLA BA degrees require 4 semesters or the equivalent of a second language.
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

All incoming CLA freshmen must complete the appropriate first year experience course sequence.

**Foundational Courses**
Take two courses for a total of 7 to 8 credits.

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

**Core Courses**
Take a minimum of six courses and 18 credits.

- CPSY 4331 - Social and Personality Development (3.0 cr)
  
  Take 1 or more course(s) from the following:
  - ANTH 3003 - Cultural Anthropology (3.0 cr)
  - CPSY 4993 - Directed Experiences 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)
  
  Take 1 or more course(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 2 or more course(s) from the following:

- CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
- CPSY 4313W - Disabilities and Development [WI] (4.0 cr)

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

- CPSY 4341 - Perceptual Development (3.0 cr)
- CPSY 4343 - Cognitive Development (3.0 cr)
- CPSY 4345 - Language Development and Communication (3.0 cr)

**Field Study or Directed Research**
Take a minimum of 2 credits.

- CPSY 4996 - Field Study in Child Psychology (1.0 - 4.0 cr)
- or CPSY 4994 - Directed Research in Child Psychology (1.0 - 4.0 cr)

**Senior Project**

**Non-Honors Sequence**

- CPSY 4347W - Senior Project [WI] (2.0 cr)

**Honors Sequence**

Honors students seeking to fulfill the honors thesis need to take CPSY 3360H in the fall of their junior year. CPSY 4994V should be taken for 2 credits, and it is typically taken in both fall and spring of a student's senior year.

- 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 2016
- 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 2 courses before admission to the program.

An introduction to psychology course must be completed before admission into the major. Students may formally declare the major with CPSY 2301 in progress.

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

Required prerequisites
Preparatory Courses
Introduction to Psychology
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)

Introduction to Child Psychology
CPSY 2301 - Introduction to Child Psychology (4.0 cr)
or CPSY 3301 - Introduction to Child Psychology for Social Sciences (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.

CLA degrees require that students complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level.

All incoming CLA freshmen must complete the appropriate first year experience course sequence.

Foundational Courses
Take two courses for a total of 7 to 8 credits.
CPSY 3308W - Introduction to Research Methods in Child Psychology [WI] (4.0 cr)
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)

Core Courses
Take a minimum of 9 courses and 27 credits. Take CPSY 4310 for a minimum of 3 credits.
CPSY 4310 - Special Topics in Child Development (1.0 - 4.0 cr)
CPSY 4331 - Social and Personality Development (3.0 cr)
CPSY 4329 - Biological Foundations of Development (3.0 cr)
Take 1 or more course(s) from the following:
• CPSY 4311 - Behavioral and Emotional Problems of Children (3.0 cr)
• CPSY 4313W - Disabilities and Development [WI] (4.0 cr)
Take 2 or more course(s) from the following:
• CPSY 4341 - Perceptual Development (3.0 cr)
• CPSY 4343 - Cognitive Development (3.0 cr)
• CPSY 4345 - Language Development and Communication (3.0 cr)
Note: CPSY 4996 may be taken for a maximum of 3 credits.
Take 3 or more course(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)
• CPSY 4996 - Field Study in Child Psychology (1.0 - 4.0 cr)

Directed Research
Take a minimum of 6 credits of CPSY 4994.
CPSY 4994 - Directed Research in Child Psychology (1.0 - 4.0 cr)

Senior Project
Non-Honors Sequence
CPSY 4347W - Senior Project [WI] (2.0 cr)

or Honors Sequence
Honors students seeking to fulfill the honors thesis need to take CPSY 3360H in the fall of their junior year. CPSY 4994V should be taken for 2 credits, and it is typically taken in both fall and spring of a student's senior year.
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)
**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 2016
- 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.

Students may formally declare the minor with CPSY 2301 in progress.

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

**Required prerequisites**

**Preparatory Course**

- CPSY 2301 - Introduction to Child Psychology (4.0 cr)
- or CPSY 3301 - Introduction to Child Psychology for Social Sciences (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)

**Core Courses**

Take 4 courses for 12 to 13 credits.

- CPSY 4331 - Social and Personality Development (3.0 cr)
- CPSY 4343 - Cognitive Development (3.0 cr)

Take 1 or more course(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)

Take 1 or more course(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)
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 2016
• 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 1016 - 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.

Students interested in the Certificate are encouraged to participate in enhancement activities such as:
1. Tandem Plus
2. Media Discussion (sponsored by the Chinese Flagship program)
3. Conversation and Chinese cultural activities
4. Chinese speaking community service
5. Chinese student group activities

**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:

**Introductory Classical Chinese I**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- CHN 5211 - Introductory Classical Chinese I (3.0 cr)
- JPN 5211 - Introductory Classical Chinese I (3.0 cr)
- KOR 5211 - Introductory Classical Chinese I (3.0 cr)

**Introductory Classical Chinese II**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CHN 5212 - Introductory Classical Chinese II (3.0 cr)
- JPN 5212 - Introductory Classical Chinese II (3.0 cr)
- KOR 5212 - Introductory Classical Chinese II (3.0 cr)

**Modern China**
Other courses that introduce students to broad cultures of modern China and its cultures may be accepted with departmental approval.
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- ALL 3336 - Revolution and Modernity in Chinese Literature and Culture (3.0 cr)
- ALL 3337 - Contemporary Chinese Literature and Popular Culture [LITR, GP] (3.0 cr)

**Study Abroad**
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 department's standard and University criteria.

**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**
1000 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 the DLI and the Associate Director of the Chinese Flagship. Students will be allowed a second submission, if needed. For Chinese Flagship students this will be a stage toward their final Capstone essay.

**ACTFL Tests**
ACTFL Tests (measuring proficiency according to the ACTFL scale) with result of Advanced Low or higher in three skills; or an American Councils for International Education Listening, Reading, and OPI test (measuring proficiency according to the ILR scale) with '2' or higher, allowing for a 1+ in one area.
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 2016
- 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 DUS approval.
Take 1 or more course(s) from the following:
- CNES 3101 - Ancient Greece: Poet and Hero in the Age of Homer (3.0 cr)
- CNES 3102 - Ancient Greece: The Golden Age of Athens (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 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- CNES 3107 - Age of Constantine the Great (3.0 cr)
- ANTH 3001 - Introduction to Archaeology [SOCS] (4.0 cr)
- ANTH 3028 - Introduction to Historical Archaeology (3.0 cr)
- ARTH 3182 - Egypt and Western Asia: Art and Archaeology of Ancient Egypt and Western Asia [AH, GP] (3.0 cr)
- CNES 3105 - Ancient Rome: The Age of Augustus (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)
- ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
or CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
- ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
or CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
- CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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)

Group 1 - Culture
Students take 5 courses for 15 credits from Groups 1-4. 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:
- CNES 3101 - Ancient Greece: Poet and Hero in the Age of Homer (3.0 cr)
- CNES 3102 - Ancient Greece: The Golden Age of Athens (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 3106 - Ancient Rome: The Age of Nero (3.0 cr)
- CNES 3107 - Age of Constantine the Great (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 **RELS 3071** - Greek and Hellenistic Religions (3.0 cr)
  or **CNES 5071** - Greek and Hellenistic Religions (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 3109** - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
  or **RELS 3542** - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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** - Dead Sea Scrolls (3.0 cr)
  or **RELS 5204** - 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 3028** - Introduction to Historical Archaeology (3.0 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 **ANTH 5009** - Prehistoric Pathways to World Civilizations [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)

**Group 3 - History of Art**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- **ARTH 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 5188** - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
- **ARTH 5192** - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
- **ARTH 5786** - Theorizing City and Space in the Mediterranean and Western Asia (3.0 cr)
- **ARTH 5787** - Visual Cultures in Contact: Cross-Cultural Interaction in the Ancient and Early Medieval Worlds (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)

**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 2016
• 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
Preparatory Courses
Students must complete an introductory course, plus the first year of Greek or Latin before declaring the minor.

Take 1 - 3 course(s) totaling 3 - 14 credit(s) from the following:

Introductory Course
Take 1 of the following courses for 3-4 credits.
• 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)
• CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
• May be taken with DUS approval.

• First-Year Greek or Latin
Take 2 of the following courses for 10 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 - 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)
• LAT 1001 - Beginning Latin I (5.0 cr)
• LAT 1002 - Beginning Latin II (5.0 cr)

Minor Requirements
Students are required to take 2 semester(s) of Greek or Latin.

Students may earn a BA or a minor in classical civilization, but not both.

Minor Courses
Take a minimum of five courses and 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.

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 3083W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
• CNES 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (3.0 cr)
• ENGL 3007 - Shakespeare [LITR] (3.0 cr)
• ENGL 3122 - Shakespeare II: The Major Themes (3.0 cr)
• ENGL 3132 - The King James Bible as Literature (3.0 cr)
• ENGL 3134 - Milton and Rebellion (3.0 cr)
• ENGL 3141 - The Restoration and the Eighteenth Century (3.0 cr)
• GRK 5100 - Advanced Reading (3.0 cr)
• GRK 5701 - Biblical Greek (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• GRK 5703 - Epigraphy (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (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 (3.0 cr)
• GRK 5100 - Advanced Reading (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• GRK 5701 - Biblical Greek (3.0 cr)
• GRK 5703 - Epigraphy (3.0 cr)
• CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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 (3.0 cr)
• GRK 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 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)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
• CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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 Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - 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)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - 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)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - 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)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - 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)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (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 3205 - Ancient Rome: The Age of Augustus (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Augustus (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
• CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
• CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• ARTH 5192 - Persia and the Ancient Iranian World: Art and Archaeology of Achaemenid to Sasanian Persia (3.0 cr)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
• CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
• ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• CNES 5071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
• CNES 5072 - The New Testament (3.0 cr)
or RELS 3072 - The New Testament (3.0 cr)
or RELS 5072 - The New Testament (3.0 cr)
• CNES 3073 - Roman Religion and Early Christianity (3.0 cr)
or RELS 3073 - Roman Religion and Early Christianity (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 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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)
• CNES 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
or HIST 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 35 to 65
• No
• 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

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Information current as of December 01, 2016
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students are required to complete a sub-plan for the major.

No course may be used to fulfill more than one major requirement. Students who double major and choose to complete the senior project requirement in their other major must take an additional four credits of appropriate electives coursework in order to satisfy the minimum 36-50 credits required for the major.

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 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (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)
- CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
- CNES 3072 - The New Testament (3.0 cr)
- CNES 3073 - Greek and Hellenistic Religions (3.0 cr)
- CNES 3951W - Major Project [WI] (4.0 cr)

**Senior Project**

CNES 3951W - Major Project [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 3083W - Ancient Comedy [WI] (3.0 cr)
- CNES 3951W - Major Project [WI] (4.0 cr)
Program Sub-plans
Students are required to complete one of the following sub-plans.

Classical Civilization
Depending on a student's language placement, the Classical Civilization track requires 36-50 total credits of coursework, including 9 credits of core courses and the senior project.

Preparatory Courses
Take 1 - 4 course(s) totaling 3 - 18 credit(s) from the following:

Introductory Course
Take 1 or more 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.
• Latin or Greek
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 more of these courses. Placement is determined by the Latin and Greek Language Coordinators.
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)
• 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)

Major Courses
Take 1 of the following courses for 4 credits.
• 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.

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 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (3.0 cr)
• ENGL 3007 - Shakespeare [LITR] (3.0 cr)
• ENGL 3122 - The Major Themes (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 (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)
• CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
  or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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)
• ARTH 5442 - Archaeology of the British Isles (3.0 cr)
• ARTH 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)
• CNES 3103 - Ancient Greece: Alexander and the East [HIS] (3.0 cr)
• CNES 3106 - Ancient Rome: The Age of Nero (3.0 cr)
• CNES 3107 - Age of Constantine the Great (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 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
  or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
• CNES 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
  or ARTH 3152 - Art and Archaeology of Ancient Greece [HIS] (3.0 cr)
• CNES 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
  or ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
• CNES 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
  or ARTH 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
• ANTH 3181 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  or HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• ARTH 3600 - The Renaissance (3.0 cr)
  or CLA 3600 - The Renaissance (3.0 cr)
  or FRIT 3600 - The Renaissance (3.0 cr)
• CNES 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 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
  or 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)
  or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3072 - The New Testament (3.0 cr)
  or CNES 5072 - The New Testament (3.0 cr)
  or RELS 3072 - The New Testament (3.0 cr)
  or RELS 5072 - The New Testament (3.0 cr)
• CNES 3073 - Roman Religion and Early Christianity (3.0 cr)
  or RELS 3073 - Roman Religion and Early Christianity (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 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
  or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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)
• CNES 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
  or HIST 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (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)

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 senior project.

**Preparatory Courses**
Take 1 - 4 course(s) totaling 3 - 18 credit(s) from the following:

**Introductory Course**
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- **CNES 1002** - World of Greece [HIS] (3.0 cr)
- Other intro course may be taken with DUS approval.
- **CNES 1042** - Greek and Roman Mythology [AH] (4.0 cr)
  or **CNES 1042H** - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)

**Greek**
Take the following 3 courses for a total of 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 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)

**Major 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 57xx**

**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 3083W** - Ancient Comedy [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 3107** - Age of Constantine the Great (3.0 cr)
- **CNES 3601** - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
- **GRK 5100** - Advanced Reading (3.0 cr)
- **GRK 5200** - Biblical Greek (3.0 cr)
- **GRK 5701** - Prose Composition (3.0 cr)
- **HIST 3052** - Ancient Civilization: Greece (3.0 cr)
- **CNES 3061** - "Bread and Circuses:” Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  or **HIST 3061** - "Bread and Circuses:” Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
- **CNES 3071** - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or **CNES 5071** - Greek and Hellenistic Religions (3.0 cr)
  or **RELS 3071** - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or **RELS 5071** - Greek and Hellenistic Religions (3.0 cr)
- **CNES 3072** - The New Testament (3.0 cr)
- **CNES 3072** - The New Testament (3.0 cr)
  or **CNES 5072** - The New Testament (3.0 cr)
  or **RELS 3072** - The New Testament (3.0 cr)
- **CNES 3072** - The New Testament (3.0 cr)
- **HIST 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 **JWST 3204** - Dead Sea Scrolls (3.0 cr)
  or **RELS 3204** - Dead Sea Scrolls (3.0 cr)
  or **RELS 5204** - Dead Sea Scrolls (3.0 cr)
- **CNES 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
  or **CNES 5502** - Ancient Israel: From Conquest to Exile (3.0 cr)
  or **HIST 3502** - Ancient Israel: From Conquest to Exile (3.0 cr)
or JWST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
- CNES 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
- GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

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 senior project.

Preparatory Courses
Take 1 - 7 course(s) totaling 3 - 32 credit(s) from the following:

Introductory Course
Take 1 or more 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.

Choose Greek and Latin
Take the Latin and Greek 3-course language sequences for a total of 28 credits. In select cases, students with advanced proficiency may be exempt from taking one or more of these courses. Placement is determined by the Latin and Greek Language Coordinators.
Take 0 - 6 course(s) totaling 0 - 28 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)
- 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)

Major 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)
- GRK 3004 - Intermediate Greek Poetry (4.0 cr)
- GRK 5100 - Advanced Reading (3.0 cr)
- GRK 5200 - Biblical Greek (3.0 cr)
- GRK 57xx

Latin Emphasis
Take 14 or more credit(s) from the following:
- GRK 3004 - Intermediate Greek Poetry (4.0 cr)
- 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)
- GRK 57xx

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 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (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 3053 - Doing Roman History: Sources, Methods, and Trends (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 senior project.

Preparatory Courses

Take 1 - 4 course(s) totaling 3 - 18 credit(s) from the following:

Introductory Course

Take 1 of the following courses for 3 credits.
• CNES 1003 - World of Rome [HIS] (3.0 cr)
• CNES 1042 - Greek and Roman Mythology [AH] (4.0 cr)
• CNES 1042H - Honors Course: Greek and Roman Mythology [AH] (4.0 cr)
• Other intro course may be taken with DUS approval.

• Latin

Take the following 3 courses for a total of 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 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)

Major Courses

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Information current as of December 01, 2016
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 57xx

**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 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (3.0 cr)
- CNES 3108 - 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 New Testament (3.0 cr)
  or RELS 3072 - The New Testament (3.0 cr)
  or RELS 5072 - The New Testament (3.0 cr)
- CNES 3073 - Roman Religion and Early Christianity (3.0 cr)
  or RELS 3073 - Roman Religion and Early Christianity (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 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
  or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
- ARTH 3162 - Roman Art and Archaeology [HIS] (3.0 cr)
- 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 3530 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
  or RELS 3535 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
- GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
- CNES 5013 - Introduction to Roman Law (3.0 cr)
  or LAW 6029 - Introduction to Roman Law (3.0 cr)
- ARTH 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
  or CNES 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (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 2016
- 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.

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

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

All incoming CLA freshmen must complete the first year experience course sequence.

Introductory Courses
Take the following 2 courses for a total of 6 credits.
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
COMM 1313W - Analysis of Argument [WI] (3.0 cr)

Core Courses
Take 2 or more course(s) totaling 6 or more 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 Electives
Required Performance Elective
Note: in order for COMM 3990 to count as a performative elective, it must be taken for at least 3 credits.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• COMM 3201 - Introduction to Electronic Media Production (3.0 - 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)

Upper Division Elective
Take 1 or more course(s) from the following:
• COMM 4xxx
• COMM 5xxx

Additional Communications Studies Electives
In addition to the above requirements and the senior project, take as many COMM 1xxx-5xxx credits as needed to reach the 34-credit graduation requirement.
Take 0 or more course(s) from the following:
• COMM 1xxx
• COMM 3xxx
• COMM 4xxx
• COMM 5xxx

Senior Project
The senior project is fulfilled by completing a senior paper. The senior paper can be written in any COMM 4xxx or 5xxx course. COMM 3995W, an S-N only, senior paper course, must be taken during the same semester in which the senior paper is written.
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 3995W - Major Project [WI] (1.0 - 3.0 cr)
• COMM 3605W - Persuasive Speaking and Speech Writing [WI] (3.0 cr)
Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• 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
Students may earn a BA or a minor in communication studies, but not both.

Minor Courses
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
or COMM 1313W - Analysis of Argument [WI] (3.0 cr)
Take 2 or more course(s) totaling 6 or more 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
Students must take a minimum of 3 elective courses, valuing a total of 9 credits. One of the three elective courses must be upper division.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
Take no more than 2 course(s) from the following:
• COMM 1xxx
• COMM 3xxx
• Take 1 or more course(s) from the following:
  • COMM 4xxx
  • COMM 5xxx
Twin Cities Campus
Comparative U.S. Race and Ethnicity Minor
African-American & African Studies, American Indian Studies, American Studies, Chicano & Latino Studies
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- 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)
- SOC 3211W - American Race Relations [DSJ, WI] (3.0 cr)
- GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
  or GWSS 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
- 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)

Electives
Take 12 or more credit(s) from the following:
- AAS 3301 - Asian America Through Arts and Culture [AH, DSJ] (3.0 cr)
- AFRO 3112 - In the Heart of the Beat: the Poetry of Rap (3.0 cr)
- AFRO 3864 - African American History: 1619 to 1865 (3.0 - 4.0 cr)
- AMIN 3501 - American Indian Tribal Governments and Politics [HIS, DSJ] (3.0 cr)
- AMIN 3872 - American Indian History: 1890 to the Present [HIS, DSJ] (3.0 cr)
- AMST 3001 - Contemporary Perspectives on Asian America [DSJ] (3.0 cr)
- AMST 3117 - Latinos in America's Global Cities [SOCS, DSJ] (3.0 cr)
- CHIC 3223 - Chicana/o and Latina/o Representation in Film [AH, DSJ] (3.0 cr)
- CHIC 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
- CHIC 3452 - Xicana/Indigena Studies: History, Culture, and Politics [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)
• AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
  or GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• AAS 3877 - Asian American History, 1850 to Present [HIS, DSJ] (3.0 cr)
  or HIST 3877 - Asian American History, 1850-Present [HIS, DSJ] (3.0 cr)
• AFRO 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
  or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, 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 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] (4.0 cr)
  or RELS 3321 - American Indian Philosophies [AH, DSJ] (4.0 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)
• 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 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 - Chicanas/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)
• 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)
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 2016
- 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

There are two entry sequences for introductory computer science: [CSCI 1133 & CSCI 1933], or [(CSCI 1103 or CSCI 1113) & CSCI 1913]. Students who intend to major in Computer Science should take the 1133-1933 sequence. Students who have AP credit in computer science will receive credit for CSCI 1103 and must take CSCI 1913. Students who are in other majors and would like to transfer to the computer science program may choose either sequence. Please note that the sequences cannot be mixed and matched. Students who take CSCI 1133 must take CSCI 1933, and students who take either CSCI 1103 or CSCI 1113 must take CSCI 1913.

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

Required prerequisites
Mathematics and Computer Science
Take a total of five courses for 20 credits. CSCI 1133 & 1933 is the recommended sequence. Sequences cannot be mixed and matched. See above note for more information.

Mathematics Core
- 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)

Computer Science Introductory Core
Option 1
- CSCI 1133 - 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)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 semester(s) or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

Major Courses
- 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)
- CSCI 2041 - Advanced Programming Principles (4.0 cr)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- CSCI 4061 - Introduction to Operating Systems (4.0 cr)

Electives
No more than 3 credits from CSCI 4970 or 59xx courses may count toward the elective requirement.
Take 8 or more credit(s) from the following:
- CSCI 4xxx
- CSCI 5xxx

Senior Project
- 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 - Human-Centered Design and Prototyping of Ubiquitous Computing Systems [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 2016
• 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. All minor coursework must be taken A-F; only courses with a grade of C- or better may be counted toward the minor. At least three upper division credits must be taken in residence at the University of Minnesota-Twin Cities campus. 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.

Introductory Sequence
Choose one two-course sequence from the following three options: CSCI 1133 & 1933 or CSCI 1103 & 1913 or CSCI 1113 & 1913.

CSCI 1133 & 1933
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 1103 & 1913
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 CSCI 1113 & 1913
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)

CSCI Electives
Take three additional CSCI courses, one of which must be CSCI 4xxx or higher. All CSCI courses may count, except CSCI 2980, 3003, 3921W, 3970, 3980 & 4921. CSCI 49xx & 59xx courses may be accepted, but only with prior adviser approval.
Take 3 or more course(s) from the following:
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)
• 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 - Human-Centered Design and Prototyping of Ubiquitous Computing Systems [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 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 1 (3.0 cr)
  • CSCI 5608 - Fundamentals of Computer Graphics II (3.0 cr)
  • CSCI 5609 - Visualization (3.0 cr)
  • CSCI 5611 - Animation & Planning in Games (3.0 cr)
  • CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)
  • CSCI 5708 - Architecture and Implementation of Database Management Systems (3.0 cr)
  • CSCI 5715 - From GPS 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 2016
- 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
ENGW 1101W - Introduction to Creative Writing [LITR, WI] (4.0 cr)

Minor Requirements
Take six 3- or 4-credit courses, as indicated below, for a minimum of 19 credits. All minor courses must be graded C- or higher. Up to one independent study course (or equivalent) may count toward the minor. Coursework completed outside of the Department of English may be counted, but only with prior departmental approval. At least two courses must be taken 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.

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 for declaring the minor.
ENGW 1101W - Introduction to Creative Writing [LITR, WI] (4.0 cr)
Take one of the following courses:
ENGW 1102 - Fiction Writing (Intro) (3.0 cr)
or ENGW 1103 - Poetry Writing (Intro) (3.0 cr)
or ENGW 1104 - Journal, Essay, Memoir Writing (Introduction) (3.0 cr)

Intermediate Course
Take one of the following courses:
ENGW 3102 - Fiction Writing (Intermediate) (3.0 cr)
or ENGW 3104 - Poetry Writing (Intermediate) (3.0 cr)
or ENGW 3106 - Journal, Essay, Memoir Writing (Intermediate) (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, DJS, WI] (4.0 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 3101 - Survey of Medieval English Literature (3.0 cr)
• ENGL 3102 - Chaucer (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 (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 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 4232 - American Drama by Writers of Color (3.0 cr)
• ENGL 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
• ENGW 3110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 3161 - Victorian Literatures and Cultures (3.0 cr)
• ENGL 3171H - Honors: Victorian Literatures and Cultures (3.0 cr)
• ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
• ENGL 3597W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
• ENGL 3598W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
• ENGL 4333 - Modern and Contemporary Drama (3.0 cr)
• ENGL 5593 - The African-American Novel (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 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 3116 - 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 AAS 4311 - Asian American Literature and Drama [LITR, DSJ] (3.0 cr)
• ENGL 3597W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
or AFRO 5397W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
• ENGL 3598W - Introduction to African American Literature and Culture II [LITR, WI] (4.0 cr)
or AFRO 5398W - Introduction to African American Literature and Culture II [LITR, WI] (4.0 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 - Senior Seminar in Creative Writing [WI] (4.0 cr)
• ENGW 4205 - Screenwriting (3.0 cr)
• ENGW 3102 - Fiction Writing (Intermediate) (3.0 cr)
or ENGW 3104 - Poetry Writing (Intermediate) (3.0 cr)
or ENGW 3106 - Journal, Essay, Memoir Writing (Intermediate) (3.0 cr)
• One of the following courses may also be used as an elective with instructor permission:
  • ENGW 5102 - Advanced Fiction Writing (4.0 cr)
or ENGW 5104 - Advanced Poetry Writing (4.0 cr)
or ENGW 5106 - Advanced Literary Nonfiction Writing (4.0 cr)
or ENGW 5310 - Reading as Writers (4.0 cr)

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Information current as of December 01, 2016
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 32
- Degree: Bachelor of Arts

Courses in the Department of Cultural Studies and Comparative Literature (CSCL) pursue questions and ways of knowing that cross traditional disciplinary boundaries. Students study literature, film and culture as sets of complex connections and interrelations: between texts and everyday life, ideas and the material world, discourse and power.

The CSCL major strives for a broad, international scope, ranging widely across history and geography. The central focus is on the ways literature and culture, broadly conceived, disseminate, challenge and reinvent modes of knowing, value systems and individual and collectives identities. The programs goal is to produce critical and self-critical readers prepared to actively participate in the intellectual conversations, forms of artistic expression and social struggles that shape global culture in our 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students must complete a minimum of 10 courses for the major: 2 introductory (1xxx) courses, plus 7 upper division courses. To allow for flexibility, the tenth course may be taken at any level. At least one upper division course in the major must be writing intensive.

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. All major coursework must be taken A-F.

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.

Preparatory Courses
- Take 2 or more course(s) totaling 6 - 8 credit(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 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)
• CSCL 1201W - Cinema [AH, WI] (4.0 cr)
or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
• CSCL 1202W - Media: Word, Image, Sound [AH, WI] (4.0 cr)
or SCMC 1202W - Media: Word, Image, Sound [AH, WI] (4.0 cr)

Major Courses
Take at least 1 course from at least 3 of the 4 subfields: Discursive Practices and Genres, Subjectivity and History, Ideologies and Disciplines, and Critical Theories and Methods. The remaining courses can be taken in the subfields, or from the Electives course group. At least 5 classes must be 3xxx, and at least 2 courses must be 4xxx or 5xxx. Depending on whether a student takes 6-8 credits of Preparatory Courses, students will need 24-26 credits of Major Courses.
Take 24 - 26 credit(s) from the following:

The Subfields
Take 3 or more course(s) from the following:

Discursive Practices and Genres
Take 0 or more course(s) from the following:
• CSCL 3172 - Music as Discourse [AH] (3.0 cr)
• CSCL 3173W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3120 - Poetry as Cultural Critique (3.0 cr)
• CSCL 3175 - Comedy: Text and Theory [AH] (3.0 cr)
• CSCL 3177 - On Television [CIV] (3.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3179 - Reading Literary Movements [LITR] (3.0 cr)
• CSCL 3220 - Screen Cultures (3.0 cr)
or SCMC 3220 - Screen Cultures (3.0 cr)

Subjectivity and History
Take 0 or more course(s) from the following:
• CSCL 3352 - Queer Aesthetics, Queer Critique (3.0 cr)
• CSCL 3458W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3461 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
• CSCL 3465 - Aliens [DSJ] (3.0 cr)
• CSCL 3621W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
• CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

Ideologies and Disciplines
Take 0 or more course(s) from the following:
• CSCL 3115 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3176 - Oppositional Cinemas [GP] (4.0 cr)
• CSCL 3361 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)

Critical Theories and Methods
Take 0 or more course(s) from the following:
• CSCL 3005 - Seminar in Critical Thought (3.0 cr)
• CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3405 - Marx for Today (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 3557W - Close Reading [LITR, WI] (3.0 cr)
• CSCL 3371 - Basic Concepts of Literary Study (3.0 cr)

Electives
1xxx-level Electives
Courses that were taken to fulfill the Preparatory Courses requirement cannot also count towards the Electives course group.
Take no more than 1 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 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)
• CSCL 1201W - Cinema [AH, WI] (4.0 cr)
or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
• CSCL 1202W - Media: Word, Image, Sound [AH, WI] (4.0 cr)
or SCMC 1202W - Media: Word, Image, Sound [AH, WI] (4.0 cr)

4xxx and 5xxx-level Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- 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 5800 - Translation Studies (1.0 cr)
- CSCL 5833 - Marx, Freud, Nietzsche: Intellectual Foundations (3.0 cr)
- CSCL 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
  or HIST 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (3.0 cr)
- CSCL 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
  or HIST 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
- CSCL 5501 - Origins of Cultural Studies (3.0 cr)
  or ENGL 5501 - Origins of Cultural Studies (3.0 cr)
- CSCL 5555 - Introduction to Semiotics (3.0 cr)
  or CL 5555 - Introduction to Semiotics (3.0 cr)
  or CSDS 5555 - Introduction to Semiotics (3.0 cr)

Directed Study, Internships, and Topics

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 no more than 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. The course number of the internship or directed study should be selected appropriate to the home department (3993, 4993, or 5993).
  Take no more than 2 course(s) from the following:
  - CSCL 3993 - Directed Study (1.0 - 3.0 cr)
  - CSCL 4944H - Honors Thesis (3.0 cr)
  - CSCL 4993 - Directed Study (1.0 - 3.0 cr)
  - CSCL 5993 - Directed Study (1.0 - 3.0 cr)
  - CSDS 5993 - Directed Study (1.0 - 3.0 cr)

- Topics
  With prior written approval from the CSCL undergraduate adviser or director of undergraduate studies, topics courses may count towards a subfield above.
  Take no more than 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)
  - CSCL 5910 - Topics in Cultural Studies and Comparative Literature (3.0 - 4.0 cr)
  - CL 5910 - Topics in Comparative Literature (3.0 - 4.0 cr)

Senior Project

The senior project requirement is fulfilled by completing one of the following options as part of the 32-credit graduation minimum:

1. Completion of a project within a directed study (CSCL 3993, 4993, 5993)
2. Completion of a project within a 3xxx or 4xxx course (arrangement with instructor)
3. Completion of coursework, including substantial writing, in any CSCL 5xxx course
4. Completion of an Honors thesis or project (CSCL 4944H)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 3173W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
- CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
- CSCL 3321W - 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 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
- CSCL 3458W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
- CSCL 3557W - Close Reading [LITR, WI] (3.0 cr)
- CSCL 3621W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
- CSCL 3456W - 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

College of Liberal Arts

Program Type: Undergraduate minor related to major
Requirements for this program are current for Fall 2016
Required credits in this minor: 18

Courses in the Department of Cultural Studies and Comparative Literature (CSCL) pursue questions and ways of knowing that cross traditional disciplinary boundaries. Students study literature, film and/or media comparatively, in terms of the myriad connections and interrelations between texts, ideas, power, the material world and discourse.

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

Minor Requirements
Students take a total of 18 credits of CSCL coursework. At least 14 credits must be upper division.

Students may earn a BA or a minor in cultural studies and comparative literature, but not both.

Preparatory Courses
Take 1 or more course(s) totaling 4 or more credit(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 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)
• CSCL 1201W - Cinema [AH, WI] (4.0 cr)
  or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
• CSCL 1202W - Media: Word, Image, Sound [AH, WI] (4.0 cr)
  or SCMC 1202W - Media: Word, Image, Sound [AH, WI] (4.0 cr)

Minor Courses
Take 14 or more credit(s) from the following:
• CSCL 3005 - Seminar in Critical Thought (3.0 cr)
• CSCL 3115 - Cinema and Ideology [AH] (4.0 cr)
• CSCL 3120 - Poetry as Cultural Critique (3.0 cr)
• CSCL 3172 - Music as Discourse [AH] (3.0 cr)
• CSCL 3173W - The Rhetoric of Everyday Life [CIV, WI] (3.0 cr)
• CSCL 3175 - Comedy: Text and Theory [AH] (3.0 cr)
• CSCL 3176 - Oppositional Cinemas [GP] (4.0 cr)
• CSCL 3177 - On Television [CIV] (3.0 cr)
• CSCL 3179 - Reading Literary Movements [LITR] (3.0 cr)
• CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
• CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3331 - Science and Culture [AH] (3.0 cr)
• CSCL 3352 - Queer Aesthetics, Queer Critique (3.0 cr)
• CSCL 3361 - Visions of Nature: The Natural World and Political Thought [ENV] (3.0 cr)
• CSCL 3405 - Marx for Today (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 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• CSCL 3458W - The Body and the Politics of Representation [HIS, WI] (3.0 cr)
• CSCL 3461 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
• CSCL 3465 - Aliens [DSJ] (3.0 cr)
• CSCL 3472 - Gay Men and Homophobia in American Culture [DSJ] (3.0 cr)
• CSCL 3557W - Close Reading [LITR, WI] (3.0 cr)
• CSCL 3621W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)
• CSCL 3771 - Basic Concepts of Literary Study (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 5800 - Translation Studies (1.0 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 5220 - Screen Cultures (3.0 cr)
  or SCM 3220 - Screen Cultures (3.0 cr)
• HIST 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)
  or HIST 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 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
  or HIST 5282 - European Intellectual History: The Modern Period, 1750-Present (3.0 cr)
• CSCL 5501 - Origins of Cultural Studies (3.0 cr)
  or ENGL 5501 - Origins of Cultural Studies (3.0 cr)
• CSCL 5555 - Introduction to Semiotics (3.0 cr)
  or CL 5555 - Introduction to Semiotics (3.0 cr)
  or CSDS 5555 - Introduction to Semiotics (3.0 cr)
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.

Students who double-major and choose to complete the senior project in their other major are still responsible for taking a minimum of 45 program credits. Students may earn a BA or a BFA in dance, but not both.

CLA B.A. degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a B.A. at least 18 of the 48 upper-division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper-division credits outside the major. See your adviser for a list of courses that can or cannot be used to meet this requirement.

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

Major Core
Take 13 or more course(s) totaling 31 or more credit(s) from the following:

Dance Composition
Take exactly 4 course(s) totaling exactly 10 credit(s) from the following:
• DNCE 1601 - Dance Improvisation (1.0 cr)
• 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 2 course(s) totaling exactly 4 credit(s) from the following:
• DNCE 3010 - Modern Dance Technique 5 (2.0 cr)
• DNCE 3020 - Modern Dance Technique 6 (2.0 cr)
• Dance Studies
  Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:
  • DNCE 3401W - Dance History 1 [GP, WI] (3.0 cr)
  • DNCE 3402W - Dance History 2 [WI] (3.0 cr)
  • DNCE 4443 - Theorizing Dancing Bodies (3.0 cr)
  • DNCE 1626 - Music for Dance [AH] (3.0 cr)
  • DNCE 3901 - Survival Strategies in Dance (3.0 cr)

• Dance Performance
  Please note that DNCE 3701 may only be counted once. Both DNCE 3700 & 5700 may be counted more than once.
  Take 2 or more course(s) totaling 2 or more credit(s) from the following:
  • DNCE 3700 - Performance (1.0 cr)
  • DNCE 3701 - Summer Dance Intensive (1.0 - 3.0 cr)
  • DNCE 5700 - Performance (1.0 cr)

Electives
  Take at least 9 credits of academic electives and 3 credits of technique electives for a total of at least 12 credits. At least 9 credits must be 3xxx or above. Other courses in dance or in 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.

Academic Electives
  Take 9 or more 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 2021 - Bodies and Their Discontents (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)
  • ARTH 3464 - Art Since 1945 [HIS] (4.0 cr)
  • CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
  • CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)
  • CSCL 3458W - 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 3433 - Articulate Body (3.0 cr)
  • DNCE 3434 - Nutrition and Body Maintenance for Movement Artists (2.0 cr)
  • DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
  • DNCE 3495 - Dance and Global Tourism [GP] (3.0 cr)
  • DNCE 3621 - Dance Production I (2.0 cr)
  • DNCE 3622 - Dance Production II (2.0 cr)
  • DNCE 5334 - Introduction to Dance/Movement Therapy (2.0 cr)
  • DNCE 5495 - Dance and Global Tourism (3.0 cr)
  • DNCE 5858 - Teaching Dance (4.0 cr)
  • GLOS 3602 - 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 Theories [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)
  • DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)
  • AAS 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
  • AFRO 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)
  • 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 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  • GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  • GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (4.0 cr)
or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (4.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 cr)
or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (4.0 cr)
• GLBT 4403 - Queering Theory (3.0 cr)
or GWSS 4403 - Queering Theory (3.0 cr)

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 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 - T'ai Chi Ch'uan (1.0 cr)
• DNCE 1343 - Hip Hop Movement (1.0 cr)
• DNCE 1347 - Pilates Conditioning (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 3351 - African Diasporic Movement 5 (1.0 cr)
• DNCE 3352 - African Diasporic Movement 6 (1.0 cr)
• DNCE 5010 - Modern Dance Technique 7 (2.0 cr)
• DNCE 5020 - Modern Dance Technique 8 (2.0 cr)
• DNCE 5110 - Ballet Technique 7 (1.0 cr)
• DNCE 5120 - Ballet Technique 8 (1.0 cr)

Senior Seminar
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
• DNCE 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:
• 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 3321W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• CSCL 3458W - 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 3467W - 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 [SOCS, DSJ, WI] (3.0 cr)
or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, 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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 78
• 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.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

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

Dance Composition
Take the following 6 courses for a total of 14 credits.
DNCE 1601 - Dance Improvisation (1.0 cr)
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 cr)

Dance Technique
Take 8 or more course(s) totaling 14 or more credit(s) from the following:

Modern Dance & Ballet Techniques
Complete the Modern and Ballet sequences by taking the following 6 courses for a total of 12 credits.
• DNCE 3010 - Modern Dance Technique 5 (2.0 cr)
• DNCE 3020 - Modern Dance Technique 6 (2.0 cr)
• DNCE 3110 - Ballet Technique 5 (2.0 cr)
• DNCE 3120 - Ballet Technique 6 (2.0 cr)
• DNCE 5010 - Modern Dance Technique 7 (2.0 cr)
• DNCE 5020 - Modern Dance Technique 8 (2.0 cr)
• Take either the Jazz Technique or the African Diaspora Movement sequence for a total of 2 credits.
Jazz Technique
DNCE 3210 - Jazz Technique 5 (1.0 cr)
DNCE 3220 - Jazz Technique 6 (1.0 cr)
or
African Diasporic Movement
DNCE 3351 - African Diasporic Movement 5 (1.0 cr)
DNCE 3352 - African Diasporic Movement 6 (1.0 cr)

Dance Studies
Take the following 9 courses for a total of 26 credits.
DNCE 3401W - Dance History 1 [GP, WI] (3.0 cr)
DNCE 3402W - Dance History 2 [WI] (3.0 cr)
DNCE 4443 - Theorizing Dancing Bodies (3.0 cr)
DNCE 1626 - Music for Dance [AH] (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 - Survival Strategies in Dance (3.0 cr)
DNCE 5858 - Teaching Dance (4.0 cr)

Dance Performance
Performance credits should be spread throughout four years of coursework. DNCE 3700 & 5700 are repeatable up to four times each.
Please note that DNCE 3701 may only be counted once.
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
• DNCE 3700 - Performance (1.0 cr)
• DNCE 3701 - Summer Dance Intensive (1.0 - 3.0 cr)
• DNCE 5700 - Performance (1.0 cr)

Academic Electives
Take at least 12 Academic Elective credits. Of the 12 credits, at least 3 must be from the Dance Ethnology Electives. Note: Across both the Academic Electives and the Technique Electives, at least 12 credits must be 3xxx or above. 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 12 or more credit(s) from the following:

Dance Ethnology Elective
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• DNCE 3487W - Dance and Citizenship: Land, Migration, and Diaspora [WI] (3.0 cr)
• DNCE 3525W - Dance and Global Tourism [GP] (3.0 cr)
• DNCE 5493 - Choreographing Social Justice: Staging "Equitable" Choreographies (3.0 cr)

General Academic Electives
Take 0 or more 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 2021 - Bodies and Their Discontents (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] (4.0 cr)
• CHIC 3213 - Chicano Music and Art [AH, DSJ] (3.0 cr)
• CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3458W - 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 5334 - Introduction to Dance/Movement Therapy (2.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 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 Theories [GP] (3.0 cr)
Technique Electives
Take at least 6 credits of Technique Electives. Of the 6 credits, at least 2 must be from the World Dance Technique Electives. Note: Across the Academic and Technique Electives, at least 12 credits must be 3xxx or above. 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 6 or more credit(s) from the following:

**General Technique Electives**
Take 0 - 4 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 1323 - Swing Dance (1.0 cr)
- DNCE 1343 - Hip Hop Movement (1.0 cr)
- DNCE 1347 - Pilates Conditioning (1.0 cr)
- DNCE 1349 - Contact Improvisation (1.0 cr)
- DNCE 3301 - Tap Technique 3 (1.0 cr)
- DNCE 3302 - Tap Technique 4 (1.0 cr)
- DNCE 5110 - Ballet Technique 7 (1.0 cr)
- DNCE 5120 - Ballet Technique 8 (1.0 cr)

**World Dance Technique**
Please note that DNCE 1313, 1351, 1352, 1353, 1354, 3351 & 3352 may not be counted if you have already completed African Diasporic Movement as part of the Dance Technique sub-requirement.
Take 2 - 6 credit(s) from the following:
- 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 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 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)

**Senior Seminar**
Take exactly 1 course(s) totaling exactly 2 credit(s) from the following:
- DNCE 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:
- 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 3321W - Theories of Culture [AH, WI] (3.0 cr)
• CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• CSCL 3458W - 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 [SOCS, DSJ, WI] (3.0 cr)
  or SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
Twin Cities Campus
Danish Minor
German, Scandinavian, & Dutch
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 16 to 36

The minor includes the study of the spoken language, literature, culture, and civilization.

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

Admission Requirements
Complete the introductory 4-semester Danish language sequence or its equivalent. These courses are not available on the Twin Cities Campus. Contact the CLA Language Center at elsie@umn.edu to inquire about Courseshare options to take Danish (via videoconferencing), or about test options for demonstrating proficiency in Danish, or about the transfer of Danish language courses taken at other institutions.

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

Minor Requirements
Students are required to take 4 semester(s) of Danish.

The minor consists of a minimum of 16 credits in 3xxx, 4xxx (beyond 4004), and 5xxx courses with no more than one course being a directed or independent study. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the Scandinavian program at the University of Minnesota - Twin Cities campus. Students with a German, Scandinavian, Dutch major may elect a minor in Danish, but no courses may count for both the major and the minor. The program must be approved by the director of undergraduate studies.

Minor Courses
SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- SCAN 3xxx
- SCAN 4xxx
- SCAN 5xxx
Twin Cities Campus
Digital Media Studies Minor
CLA Dean’s Office
College of Liberal Arts

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2016
• 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
Complete a minimum of 15 credits; one course (up to four credits) may be at the 1xxx level. No more than 8 credits may be earned from a single department. 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.

Please note that students completing a Journalism major may only count one JOUR course (3.0 cr) towards the digital media studies minor. As a result, journalism majors must complete four elective courses (12.0 cr) to complete the required minimum of 15 credits for the minor.

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

Media Studies/Journalism Core
Journalism majors may only count one JOUR course (3.0 cr) towards the minor.
Take 1 - 2 course(s) totaling 3 - 6 credit(s) from the following:
• JOUR 1501 - Digital Games, Sims and Apps: Storytelling, Play and Commerce [AH, TS] (3.0 cr)
• JOUR 3551 - Economics of New Media [TS] (3.0 cr)
• JOUR 3552 - Internet and Global Society [GP] (3.0 cr)
• JOUR 4272 - Interactive Advertising (3.0 cr)
• JOUR 3751 - New Media and Culture [AH, TS] (3.0 cr)
• JOUR 5501 - Communication, Public Opinion, and Social Media (3.0 cr)

Electives
Journalism majors must complete four elective courses (12.0 cr) 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 1490 - Workshop in Art (1.0 - 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)
• CSCI 3461 - Monsters, Robots, Cyborgs [LITR] (3.0 cr)
• CSCI 3177 - On Television [CIV] (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 (4.0 cr)
• ENGL 4727 - Digital Planet: Understanding Your World in the Information Age [TS] (3.0 cr)
• ENGL 4723 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
• GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
• GLOS 3143 - Living in the Global [CIV] (3.0 cr)
• HIST 3705 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)
• HIST 1842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
• HSCI 3331 - Technology and American Culture [HIS, TS] (3.0 cr)
• HSCI 3715 - Technology and Civilization: Waterwheels to the Web [HIS, TS] (3.0 - 4.0 cr)
• HECU 3555W - Making Media & Change: Digital Technologies, Storytelling, and Activism From Consumers to Creators [AH, TS,
WI] (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)
  or ARCH 5611 - Design in the Digital Age (3.0 cr)
• ARTS 1601 - Experimental and Media Arts [AH] (4.0 cr)
• ARTS 3601 - New Media: Making Art Interactive (4.0 cr)
  or ARTS 5620 - Narrative Digital Video (4.0 cr)
• ARTS 3603 - Experimental Video (4.0 cr)
  or ARTS 5630 - Advanced Experimental Video (4.0 cr)
• ARTS 3604 - Animation (4.0 cr)
  or ARTS 5640 - Advanced Animation (4.0 cr)
• HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
  or CSCI 4921 - History of Computing [TS, HIS] (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 2016
- 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 take 4 semester(s) of Dutch.

The minor consists of a minimum of 15 credits in 3xx and 5xxx courses with no more than one course being directed or independent study. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the Dutch Studies program at the University of Minnesota - Twin Cities campus. 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. The program must be approved by the director of undergraduate studies.

Minor Courses
Up to two electives from other departments may be applied to the Dutch studies minor after consultation with the director of undergraduate studies.
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)
Take 9 or more credit(s) from the following:
- DTCH 3xxx
- DTCH 5xxx
Earth Sciences B.A.
Department of Earth Sciences
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 71
- 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students may earn a BA or a minor in earth sciences, but not both.

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

Mathematics
Take 1 of the following calculus sequences for a total of 8 credits.
MATH 1271 - Calculus I [MATH] (4.0 cr)
MATH 1272 - Calculus II (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1572H - Honors Calculus II (4.0 cr)

Physics
Take 2 of the following courses for a total of 8 credits.
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

Chemistry
Take 4 of the following courses for a total of 8 credits.
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)

Major Courses
Take the following 7 courses for a total of 25 credits.
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)

Field Courses
Take 2 of the following courses for a total of 8 credits.
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)

Electives
ESCI 2302, 4501, and 4602 are strongly recommended for satisfying the elective credits.
Take 14 or more credit(s) from the following:
- ESCI 2302 - Petrology (3.0 cr)
- ESCI 3001 - Earth Materials (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 3093 - Problems in Earth Sciences: Junior (1.0 - 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 3890 - Field Workshop (1.0 cr)
- ESCI 4xxx
- 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 - Principles of Geophysical Exploration (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 4503 - Neotectonics (3.0 cr)
• ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
• ESCI 4701 - Geomorphology (4.0 cr)
• ESCI 4702 - General Hydrogeology (3.0 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 5353 - Electron Microprobe Theory and Practice (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 5504W - Neotectonics [WI] (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5713 - Tracers and Karst Hydrogeology (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• GCC 3004 - Grand Challenge: The Fracking Boom - Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 3006 - Grand Challenge: Climate Change - Myths, Mysteries, and Uncertainties [ENV] (3.0 cr)
• ESCI 4701 - Geomorphology (4.0 cr)
• ESCI 5988 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• MATS 5353 - Electron Microprobe Theory and Practice (3.0 cr)

Major Project
The Major Project for the Earth Sciences BA is fulfilled with successful completion of either ESci 4911 or ESci 4971W. Students must complete one of these courses for the Field Courses 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:
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)
• ESCI 4971W - Field Hydrogeology [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 2016
- 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.

Minor Courses
Choose from one of the following courses:
- 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)

Take 14 or more credit(s) from the following:
- ESCI 2xxx
- ESCI 2302 - Petrology (3.0 cr)
- ESCI 3xxx
- ESCI 3001 - Earth Materials (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 3093 - Problems in Earth Sciences: Junior (1.0 - 4.0 cr)
- ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
- ESCI 3890 - Field Workshop (1.0 cr)
- ESCI 4xxx
- 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 - Principles of Geophysical Exploration (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 4503 - Neotectonics (3.0 cr)
- ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
- ESCI 4702 - General Hydrogeology (3.0 cr)
- ESCI 4703 - Glacial Geology (4.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- ESCI 5xxx
- 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 5353 - Electron Microprobe Theory and Practice (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 5504W - Neotectonics [WI] (3.0 cr)
• ESCI 5601W - Advanced Sedimentology [WI] (4.0 cr)
• ESCI 5705 - Limnogeology and Paleoenvironment (3.0 cr)
• ESCI 5713 - Tracers and Karst Hydrogeology (3.0 cr)
• ESCI 5980 - Seminar: Current Topics in Earth Sciences (1.0 - 4.0 cr)
• ESPM 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
• GCC 3004 - Grand Challenge: The Fracking Boom - Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
• GCC 3006 - Grand Challenge: Climate Change - Myths, Mysteries, and Uncertainties [ENV] (3.0 cr)
• GCC 5008 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
• MATS 5353 - Electron Microprobe Theory and Practice (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)
Economics - Quantitative Emphasis B.A.

Economics

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 53
- 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 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 the following 4 courses for a total of 16 credits.
- ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- ECON 1102 - Principles of Macroeconomics (4.0 cr)
- 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)
- MATH 1272 - 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper-division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.
All major coursework must be taken A-F. Up to 3 credits of independent study (ECON 3991) may count toward the major. Supporting work in computer science, mathematics, and statistics is recommended. Only one country/area study course (ECON 4311, 4317) or DUS-approved study-abroad course may count toward the electives requirement. All study-abroad or transfer courses must be approved by the director of undergraduate studies in the Department of Economics. Students must complete at least 12 credits of upper division coursework (ECON 3xxx-5xxx) in residence at the University of Minnesota - Twin Cities campus. Students must take at least one writing intensive course in the major, or take ECON 4100W concurrently with ECON 4831, or an honors course.

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.

Major Requirements
Take 6 of the following courses for a total of 23 credits.

- 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, students can take ACCT 5101 as one of the required electives. PUBH 6832 is a Masters’ level course. Economics majors with a 3.6 or higher GPA should contact the Director of Undergraduate Studies about the possibility of signing up for this course.

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

- ECON 3960 - Topics in Economics (3.0 cr)
- ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
- ECON 4311 - Economy of Latin America (3.0 cr)
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4337 - Comparative Economic Systems (3.0 cr)
- ECON 4322W - International Finance [WI] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- ECON 4531 - Labor Economics (3.0 cr)
- ECON 4601 - Urban Economics (3.0 cr)
- ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
- ECON 4721 - Macroeconomic Policy (3.0 cr)
- ECON 4821 - Public Economics (3.0 cr)
- ECON 4831 - Cost-Benefit Analysis (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
  or ECON 4431V - Honors Course: International Trade [GP, WI] (4.0 cr)
- ECON 4721 - Money and Banking (3.0 cr)
  or ECON 4721H - Money and Banking (3.0 cr)
- ECON 4751 - Financial Economics (3.0 cr)
  or ECON 4751H - Honors: Financial Economics (4.0 cr)
- ECON 4960 - Topics in Economics (4.0 cr)
  or ECON 4960H - Honors: Topics in Economics (4.0 cr)
- ECON 5890 - Economics of the Health-Care System (3.0 cr)
  or PUBH 6832 - Economics of the Health Care System (3.0 cr)
  or ECON 4431W - International Trade [GP, WI] (3.0 cr)

Senior Project
This requirement may be waived if a senior project has been completed in another CLA department.

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

- ECON 3951 - Major Project 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:

- ECON 4100W - Undergraduate Writing in Economics [WI] (1.0 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)
Twin Cities Campus
Economics B.A.
Economics
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• 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 B.A. 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 the following 3 courses for a total of 12 credits.
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
ECON 1102 - Principles of Macroeconomics (4.0 cr)
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)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your adviser for a list of courses that can or cannot be used to meet this requirement.

All major coursework must be taken A-F. Up to 3 credits of independent study (ECON 3991) may count toward the major. Supporting work in computer science, mathematics, and statistics is recommended. Only one country/area study course (ECON 4311, 4317) or
DUS-approved study-abroad course may count toward the electives requirement. All study-abroad or transfer courses must be approved by the director of undergraduate studies in the Department of Economics. Students must complete at least 12 credits of upper-division coursework (ECON 3xxx-5xxx) in residence at the University of Minnesota - Twin Cities campus. Students must take at least one writing intensive course in the major, or take ECON 4100W concurrently with ECON 4831, or an honors course. 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.

### Major Requirements

Take 4 of the following courses for a total of 15-16 credits.

- **ECON 3101** - Intermediate Microeconomics (4.0 cr)
- **ECON 3102** - Intermediate Macroeconomics (4.0 cr)
- **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)  
  - or **STAT 3021** - Introduction to Probability and Statistics (3.0 cr)
- **STAT 3022** - Data Analysis (4.0 cr)  
  - or **STAT 3032** - Regression and Correlated Data (4.0 cr)

### Electives

Students may substitute ACCT 5100 for one of the six required elective courses, with the prior approval of the director of undergraduate studies.

Take 6 or more course(s) totaling 18 or more credit(s) from the following:

- **ECON 4113** - Introduction to Mathematical Economics (4.0 cr)
- **ECON 4211** - Principles of Econometrics (4.0 cr)
- **ECON 4311** - Economy of Latin America (3.0 cr)
- **ECON 4331W** - Economic Development [WI] (3.0 cr)
- **ECON 4337** - Comparative Economic Systems (3.0 cr)
- **ECON 4432W** - International Finance [WI] (3.0 cr)
- **ECON 4531** - Labor Economics (3.0 cr)
- **ECON 4621** - Urban Economics (3.0 cr)
- **ECON 4631** - Industrial Organization and Antitrust Policy (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 4431W** - International Trade [GP, WI] (3.0 cr)  
  - or **ECON 4431V** - Honors Course: International Trade [GP, WI] (4.0 cr)
- **ECON 4721** - Money and Banking (3.0 cr)  
  - or **ECON 4721H** - Money and Banking (3.0 cr)
- **ECON 4751** - Financial Economics (3.0 cr)  
  - or **ECON 4751H** - Honors: Financial Economics (4.0 cr)
- **ECON 4960** - Topics in Economics (4.0 cr)  
  - or **ECON 4960H** - Honors: Topics in 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)
  - **PUBH 6832** - Economics of the Health Care System (3.0 cr)

### Senior Project

This requirement may be waived if a senior project has been completed in another CLA department. ECON 3991 must be taken for 3 credits in order to count as the Senior Project.

Take 0 - 1 course(s) totaling 0 - 6 credit(s) from the following:

- **ECON 3951** - Major Project Seminar (2.0 cr)
- **ECON 3991** - Independent Study (1.0 - 3.0 cr)
- **ECON 4993** - Directed Study (1.0 - 4.0 cr)
- A term paper from an upper-division writing intensive course with a minimum grade of A-.
- Honors project or thesis (up to 6 credits)

### Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 4100W** - Undergraduate Writing in Economics [WI] (1.0 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)
Twin Cities Campus
Economics B.S.

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 the following 4 courses for a total of 16 credits.
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
ECON 1102 - Principles of Macroeconomics (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)

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

Program Requirements
CLA degrees require that students complete 48 credits of upper-division coursework taken at the 3xxx,4xxx, or 5xxx level.

All major coursework must be taken A-F. Up to 3 credits of independent study (ECON 3991) may count toward the major. Supporting work in computer science, mathematics, and statistics is recommended. Only one country/area study course (ECON 4317, 4311) or DUS-approved study abroad course may count toward the electives requirement. All study-abroad or transfer courses must be approved by the Director of Undergraduate Studies in the Department of Economics. Students must complete at least 12 credits of upper-division coursework (ECON 3xxx-5xxx) in residence at the University of Minnesota-Twin Cities campus. Students must take at least one writing intensive course in the major, or take ECON 4100W concurrently with ECON 4831, or an honors course. 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.
Major Requirements
Take 7 of the following courses for a total of 28 credits.
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 2263 - Multivariable Calculus (4.0 cr)
or MATH 2573H - Honors Calculus III (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, students may use one of the following courses as an Econ elective: ACCT 5101, MATH 4065, MATH 5615H, or MATH 4603.
Take exactly 4 course(s) totaling 12 - 16 credit(s) from the following:
• ECON 4311 - Economy of Latin America (3.0 cr)
• ECON 4317 - The Chinese Economy (3.0 cr)
• ECON 4331W - Economic Development [WI] (3.0 cr)
• ECON 4337 - Comparative Economic Systems (3.0 cr)
• ECON 4432W - International Finance [WI] (3.0 cr)
• ECON 4531 - Labor Economics (3.0 cr)
• ECON 4621 - Urban Economics (3.0 cr)
• ECON 4631 - Industrial Organization and Antitrust Policy (3.0 cr)
• ECON 4821 - Public Economics (3.0 cr)
• ECON 4831 - Cost-Benefit Analysis (3.0 cr)
• ECON 4431W - International Trade [GP, WI] (3.0 cr)
or ECON 4431V - Honors Course: International Trade (4.0 cr)
• ECON 4721 - Money and Banking (3.0 cr)
or ECON 4721H - Money and Banking (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 4960 - Topics in Economics (4.0 cr)
or ECON 4960H - Honors: Topics in Economics (4.0 cr)
Advanced Courses
PUBH 6832 is a masters' level course. Economics majors with a 3.6 or higher GPA should contact the director of undergraduate studies about the possibility of signing up for this course. 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 4431V - Honors Course: International Trade [GP, WI] (4.0 cr)
• ECON 4721H - Money and Banking (3.0 cr)
• ECON 4738 - Advanced Macroeconomic Policy (4.0 cr)
• ECON 4751H - Honors: Financial Economics (4.0 cr)
• ECON 4828 - Advanced Public Economics (4.0 cr)
• ECON 4968 - Advanced Topics in Economics (4.0 cr)
• ECON 4108 - Advanced Game Theory and Applications (4.0 cr)
• ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
• ECON 4748 - Advanced Quantitative Analysis of the Macroeconomy (4.0 cr)
• ECON 4161 - Microeconomic Analysis (2.0 cr)
• ECON 4162 - Microeconomic Analysis (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)
• 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 4432W - International Finance [WI] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
  or ECON 4431V - Honors Course: 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)
Twin Cities Campus
Economics Minor
Economics
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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
ECON 1101 & 1102 are basic pre-requisites for all upper-division ECON coursework.

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

Required prerequisites
Preparatory Courses
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
ECON 1102 - Principles of Macroeconomics (4.0 cr)

Minor Requirements
The minor consists of 8 credits of lower division coursework, and 17-35 credits of upper division coursework, dependent on the chosen subfield. This includes a minimum of 3 upper division ECON courses and supporting work in mathematics and/or statistics, where applicable. At least 9 upper-division ECON credits must be taken in residency 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 17 sub-plan credits. No substitutions are permitted. All minor coursework must be taken A-F. Successful completion of the courses listed here constitutes satisfaction of the requirements for a minor in general economics.

General Requirements
Take exactly 2 course(s) totaling exactly 8 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)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)

Electives
Only one country/area course may count toward the minor.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- ECON 3xxx
- ECON 4xxx
- Country/Area Course
  Take 0 - 1 course(s) from the following:
  - ECON 4311 - Economy of Latin America (3.0 cr)
• ECON 4317 - The Chinese Economy (3.0 cr)

Economic Theory
Take a total of 27-28 sub-plan credits. No substitutions are permitted. All minor coursework must be taken A-F. Only one country/area course may count toward the minor. Successful completion of the courses listed here constitutes satisfaction of the requirements for a minor in economic theory.

Economic Theory Requirements
Take exactly 7 course(s) totaling 27 - 28 credit(s) from the following:
• MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
• MATH 2263 - Multivariable Calculus (4.0 cr)
• ECON 3101 - Intermediate Microeconomics (4.0 cr)
• ECON 3102 - Intermediate Macroeconomics (4.0 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 1572H - Honors Calculus II (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 35 sub-plan credits. No substitutions are permitted. All minor coursework must be taken A-F. Successful completion of the courses listed here constitutes satisfaction of the requirements for a minor in econometrics.

Econometrics Requirements
Take the following 6 courses for a total of 24 credits.
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
ECON 3101 - Intermediate Microeconomics (4.0 cr)
ECON 3102 - Intermediate Macroeconomics (4.0 cr)
ECON 4261 - Introduction to Econometrics (4.0 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 1572H - Honors Calculus II (4.0 cr)
• ECON 4113 - Introduction to Mathematical Economics (4.0 cr)
  or ECON 4731 - Macroeconomic Policy (3.0 cr)

Theory of Statistics
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)
  or 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 20-23 sub-plan credits. No substitutions are permitted. All minor coursework must be taken A-F. Only one country/area course may count toward the minor. Successful completion of the courses listed here constitutes satisfaction of the requirements for a minor in international trade and development.

Calculus
Take 1 of the following courses for 4 credits.
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)

International Trade and Development Requirements
Take the following 3 courses for a total of 10 credits.
ECON 3101 - Intermediate Microeconomics (4.0 cr)
ECON 4331W - Economic Development [WI] (3.0 cr)
ECON 4337 - Comparative Economic Systems (3.0 cr)

International Economics
Take the following course or course pair for a total of 3-6 credits:
- **ECON 4401** - International Economics [GP] (3.0 cr)
- **ECON 4431W** - International Trade [GP, WI] (3.0 cr)
- **ECON 4432W** - International Finance [WI] (3.0 cr)

**International Economics Area of Focus**

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

- Take exactly 1 course(s) from the following:
  - **ECON 4311** - Economy of Latin America (3.0 cr)
  - **ECON 4317** - The Chinese Economy (3.0 cr)
  - Study-abroad Course Approved by ECON Director of Undergraduate Studies

**Applied Microeconomics**

Take a total of 20 sub-plan credits. No substitutions are permitted. All minor coursework must be taken A-F. Successful completion of the courses listed here constitutes satisfaction of the requirements for a minor in applied microeconomics.

**Applied Microeconomics Requirements**

Take the following 5 courses for 17 credits. ECON 4211 is recommended, but not required.

- **ECON 3101** - Intermediate Microeconomics (4.0 cr)
- **ECON 4531** - Labor Economics (3.0 cr)
- **ECON 4631** - Industrial Organization and Antitrust Policy (3.0 cr)
- Additional ECON 4xxx (3 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)

**Electives**

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 25 sub-plan credits. No substitutions are permitted. All minor coursework must be taken A-F. Successful completion of the courses listed here constitutes satisfaction of the requirements for a minor in monetary theory.

**Calculus**

Take 1 of the following courses for 4 credits.

- **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)

**Monetary Theory Requirements**

Take exactly 6 course(s) totaling exactly 21 credit(s) from the following:

- **ECON 3101** - Intermediate Microeconomics (4.0 cr)
- **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 2016
• 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.

Students transferring courses from other colleges and universities must complete five University of Minnesota three- or four-credit English courses in residence. These courses must include ENGL 3960W, ENGW 3960W, or ENGL 3883V (the senior project course), and at least four other upper division courses (3xxx or higher).

Students wishing to transfer English courses from outside the University of Minnesota and apply them to the English major requirements should discuss this with the undergraduate advisor. Note: All English courses completed at two-year community colleges are accepted as equivalent to University lower division (1xxx) courses, regardless of content. Advanced Placement (AP) and International Baccalaureate (IB) credits are not included in the major.

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.

The major is fulfilled by a minimum of 34 credits and 10 courses. At least 31 of these 34 credits must be upper division (3xxx or higher). Students may count one ENGL/W 1xxx course toward the electives sub-requirement. Independent study is limited to 12 credits of directed study, directed instruction, or independent and distance learning (IDL) courses. Students may earn a BA or a minor in English, but not both. 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. The Undergraduate Studies Office maintains a list of such courses.

All incoming CLA freshmen must complete the First Year Experience course sequence. CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper-division credits outside the major. See your adviser for a list of courses that can or cannot be used to meet this requirement.

**Textual Analysis**
The methods course provides skills in close and critical reading, background in history and culture, and multiple approaches to literary works.

- 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.

- 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)

- **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 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 3101 - Survey of Medieval English Literature (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 (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 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 4232 - American Drama by Writers of Color (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 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, WI] (4.0 cr)
or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, 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, WI] (4.0 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 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (3.0 cr)

Language, Theory, and Criticism
Take one course for a minimum of 3 credits. This requirement allows students to deepen their understanding of the English language or to concentrate on theoretical questions that shape readers' understanding of texts.

ENGL 3002 - Modern Literary Criticism and Theory (3.0 cr)
or ENGL 3601 - Analysis of the English Language (4.0 cr)
or ENGL 3741 - Literacy and American Cultural Diversity [DSJ] (4.0 cr)
or ENGL 4003 - History of Literary Theory (3.0 cr)
or ENGL 4722 - Alphabet to Internet: History of Writing Technologies (4.0 cr)
or Take both of the following internship courses.
ENGL 3505 - Community Learning Internships I (3.0 cr)
ENGL 3506 - Learning Internships II (4.0 cr)
or ENGL 4612 - Old English I (3.0 cr)
or MEST 4612 - Old English I (3.0 cr)
or MEST 4613 - Old English II (3.0 cr)
or ENGL 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 1xxx
• ENGL 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
• ENGL 1172 - The Story of King Arthur [LITR] (3.0 cr)
• ENGL 1181W - Introduction to Shakespeare [LITR, WI] (4.0 cr)
• ENGL 1201W - Contemporary American Literature [LITR, WI] (4.0 cr)
• ENGL 1301W - Introduction to Multicultural Literatures of the United States [LITR, DSJ, WI] (4.0 cr)
• ENGL 1501W - Literature and Public Life [LITR, CIV, WI] (4.0 cr)
• ENGW 1xxx
• ENGW 1101W - Introduction to Creative Writing [LITR, WI] (4.0 cr)
• ENGW 1102 - Fiction Writing (Intro) (3.0 cr)
• ENGW 1103 - Poetry Writing (Intro) (3.0 cr)
• ENGW 1104 - Journal, Essay, Memoir Writing (Introduction) (3.0 cr)
• ENGL 1001W - Introduction to Literature: Poetry, Drama, Narrative [LITR, WI] (4.0 cr)
or ENGL 1001V - Introduction to Literature: Poetry, Drama, Narrative [LITR, WI] (4.0 cr)
or ENGL 1401W - Introduction to World Literatures in English [LITR, GP, WI] (4.0 cr)
or ENGL 1401V - Honors: Introduction to World Literatures in English [LITR, GP, WI] (4.0 cr)
• ENGL 1701 - Modern Fiction [LITR] (3.0 cr)
or ENGL 1701H - Honors: Modern Fiction [LITR] (3.0 cr)
• ENGL 1902 - Topics: Freshman Seminar [DSJ] (3.0 cr)
or ENGL 1904 - Topics: Freshman Seminar [GP] (3.0 cr)
or ENGL 1905 - Topics: Freshman Seminar (3.0 cr)
or ENGL 1910W - Topics: Freshman Seminar (3.0 cr)

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Information current as of December 01, 2016
Upper-division Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

- ENGL 3xxx
- 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 3011 - Diaspora Poetics (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 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 3030 - Studies in Drama (3.0 cr)
- ENGL 3032 - Shakespeare in London (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 3101 - Survey of Medieval English Literature (3.0 cr)
- ENGL 3116 - Early Modern Drama (3.0 cr)
- ENGL 3122 - Shakespeare II: The Major Themes (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 (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 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 3230 - Gay, Lesbian, Bisexual, and Transgender Literature (3.0 cr)
- ENGL 3330 - Gay, Lesbian, Bisexual, and Transgender Literature (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 - Community Learning Internships I (3.0 cr)
- ENGL 3506 - Learning Internships II (4.0 cr)
- ENGL 3601 - Analysis of the English Language (4.0 cr)
- ENGL 3711 - Literary Magazine Production Lab I (4.0 cr)
- ENGL 3712 - Literary Magazine Production Lab II (4.0 cr)
- ENGL 3741 - Literacy and American Cultural Diversity [DSJ] (4.0 cr)
- ENGL 3993 - Directed Study (1.0 - 4.0 cr)
- ENGL 4xxx
- 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 4603W - World Englishes [WI] (4.0 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 (4.0 cr)
- ENGL 5xxx
- ENGL 5040 - Theories of Film (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 5510 - 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)
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<td>Poetry Writing (Intermediate) (3.0 cr)</td>
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<td>Screenwriting (3.0 cr)</td>
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<td>Advanced Fiction Writing (4.0 cr)</td>
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<td>ENGW 5104</td>
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<td>Reading as Writers (4.0 cr)</td>
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<td>ENGL 3002</td>
<td>Modern Literary Criticism and Theory (3.0 cr)</td>
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<td>Honors: Modern Literary Criticism and Theory (3.0 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>or ENGL 3006V</td>
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<td>American Indian Literature [LITR, DSJ, WI] (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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<td>Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)</td>
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<td>Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)</td>
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<td>ENGL 3592W</td>
<td>Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)</td>
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<td>Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)</td>
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<td>ENGL 3598W</td>
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or AFRO 5593 - The African American Novel (3.0 cr)
• ENGL 5597 - Seminar: Harlem Renaissance (3.0 cr)
or AFRO 3627 - Seminar: Harlem Renaissance (3.0 cr)
or ARTH 3627 - Seminar: Harlem Renaissance (3.0 cr)
or ENGW 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
or JOUR 5606W - Literary Aspects of Journalism [WI] (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 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (3.0 cr)
or ENGL 4612 - Old English I (3.0 cr)
or MEST 4612 - Old English I (3.0 cr)
or ENGL 4613 - Old English II (3.0 cr)
or MEST 4613 - Old English II (3.0 cr)

Senior Project
The program of study culminates in a writing project (4 credits), completed either in a rigorous and intensive seminar in which students produce an extended, scholarly essay (ENGL 3960W), or in an advanced creative writing workshop (ENGW 3960W) in which students produce a substantial manuscript of poetry, literary fiction, or literary nonfiction, or in a 2-semester, 4-credit honors thesis (ENGL 3883V). ENGL 3883V is usually taken in 2 semesters of 2 credits each.

ENGL 3883V - Honors Thesis [WI] (1.0 - 4.0 cr)
or ENGL 3960W - Senior Seminar [WI] (4.0 cr)
or ENGW 3960W - Senior Seminar in Creative Writing [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. 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)
or ENGL 3004W - Historical Survey of British Literatures II [HIS, WI] (4.0 cr)
or ENGL 3005W - Survey of American Literatures and Cultures I [LITR, DSJ, WI] (4.0 cr)
or ENGL 3027W - The Essay [WI] (4.0 cr)
or ENGL 4603W - World Englishes [WI] (4.0 cr)
or ENGL 3006W - Survey of American Literatures and Cultures II [LITR, DSJ, WI] (4.0 cr)
or ENGL 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
or AMIN 3201W - American Indian Literature [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 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)
or 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)
or ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or AFRO 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or ENGL 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, WI] (4.0 cr)
or 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, WI] (4.0 cr)
or 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 2016
- 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
Take five three- or four-credit ENGL or ENGW courses at the 3xxx-level or above for a minimum of 16 credits. All minor courses must be graded C- or higher. Up to one independent study course (or equivalent) may count toward the minor. Coursework completed outside of the Department of English may be counted, but only with prior departmental approval. At least two courses must be taken at the University of Minnesota - Twin Cities campus.

Students may earn a B.A. or a minor in English, but not both.

Textual Analysis
Take 1 of the following courses for 4 credits.
ENGL 3001W - Textual Analysis: Methods [WI] (4.0 cr)
or ENGL 3001V - Honors: Textual Analysis, Methods [WI] (4.0 cr)

Shakespeare
Take 1 of the following courses for at least 3 credits.
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
Historically-oriented Literature
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 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 3101 - Survey of Medieval English Literature (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 (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 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 4232 - American Drama by Writers of Color (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 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, WI] (4.0 cr)
or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, 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, WI] (4.0 cr)
ENGL 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (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
Courses that have already fulfilled the Historical Foundation Course requirement do not also fulfill the elective requirement.

Upper-division Electives
Take 2 or more course(s) totaling 6 - 8 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 3011 - Diaspora Poetics (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 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 3030 - Studies in Drama (3.0 cr)
ENGL 3032 - Shakespeare in London (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 3101 - Survey of Medieval English Literature (3.0 cr)
ENGL 3116 - Early Modern Drama (3.0 cr)
ENGL 3122 - Shakespeare II: The Major Themes (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 (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 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 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 - Community Learning Internships I (3.0 cr)
• ENGL 3506 - Learning Internships II (4.0 cr)
• ENGL 3601 - Analysis of the English Language (4.0 cr)
• ENGL 3711 - Literary Magazine Production Lab I (4.0 cr)
• ENGL 3712 - Literary Magazine Production Lab II (4.0 cr)
• ENGL 3741 - Literacy and American Cultural Diversity [DSJ] (4.0 cr)
• ENGL 3993 - Directed Study (1.0 - 4.0 cr)
• ENGL 3xxx
• 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 4603W - World Englishes [W] (4.0 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 (4.0 cr)
• ENGL 4xxx
• ENGL 5040 - Theories of Film (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 5510 - 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)
• ENGL 5992 - Directed Readings, Study, or Research (1.0 - 3.0 cr)
• ENGL 5xxx
• ENGW 3102 - Fiction Writing (Intermediate) (3.0 cr)
• ENGW 3104 - Poetry Writing (Intermediate) (3.0 cr)
• ENGW 3106 - Journal, Essay, Memoir Writing (Intermediate) (3.0 cr)
• ENGW 3110 - Topics in Creative Writing (3.0 cr)
• ENGW 3xxx
• ENGW 4205 - Screenwriting (3.0 cr)
• ENGW 4xxx
• ENGW 5102 - Advanced Fiction Writing (4.0 cr)
• ENGW 5104 - Advanced Poetry Writing (4.0 cr)
• ENGW 5106 - Advanced Literary Nonfiction Writing (4.0 cr)
• ENGW 5130 - Topics in Advanced Creative Writing (4.0 cr)
• ENGW 5202 - Journal and Memoir Writing (3.0 cr)
• ENGW 5310 - Reading as Writers (4.0 cr)
• ENGW 5993 - Directed Study in Writing (1.0 - 4.0 cr)
• ENGW 5xxx
• ENGL 3002 - Modern Literary Criticism and Theory (3.0 cr)
  or ENGL 3002H - Honors: Modern Literary Criticism and Theory (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 3010 - Studies in Poetry (3.0 cr)
  or ENGL 3010H - Honors: Studies in Poetry (3.0 cr)
• ENGL 3020 - Studies in Narrative (3.0 cr)
  or ENGL 3020H - Honors: Studies in Narrative (3.0 cr)
• ENGL 5020 - Studies in Narrative (3.0 cr)
• ENGL 3030 - Children's Literature (3.0 cr)
  or ENGL 3030H - Honors: Children's Literature (3.0 cr)
• ENGL 3040 - Studies in Film (3.0 cr)
  or ENGL 3040H - Honors: Studies in Film (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 3301W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
or AAS 3301W - 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)
or AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
ENGL 3350 - Women Writers (3.0 cr)
or ENGL 3350H - Honors: Women Writers (3.0 cr)
ENGL 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
or CHIC 3507W - Introduction to Chicana/o Literature [LITR, DSJ, WI] (3.0 cr)
ENGL 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
or AFRO 3592W - Introduction to Black Women Writers in the United States [LITR, DSJ, WI] (3.0 cr)
ENGL 3593 - The African American Novel (3.0 cr)
or AFRO 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, WI] (4.0 cr)
or AFRO 3597W - Introduction to African American Literature and Culture I [LITR, 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, WI] (4.0 cr)
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ENGL 3020 - Studies in Narrative (3.0 cr)
or ENGL 3020H - Honors: Studies in Narrative (3.0 cr)
or ENGL 5020 - Studies in Narrative (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)
AAS 4232 - American Drama by Writers of Color (3.0 cr)
or ENGL 4232 - American Drama by Writers of Color (3.0 cr)
ENGL 5501 - Origins of Cultural Studies (3.0 cr)
or CSCL 5501 - Origins of Cultural Studies (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 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)
ENGL 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (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)
Twin Cities Campus
Environmental Geosciences Minor
CLA Dean's Office
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• Required credits in this minor: 18

The minor is offered in cooperation with the Department of Earth Sciences.

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

Minor Requirements
Students must complete ESCI 1001 or 3001.

Preparatory Courses
Take one of the following 1xxx-level courses.
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)
or ESCI 2201 - Solid Earth Dynamics (4.0 cr)

Minor Courses
Students choose minor courses in consultation with the ESci director of undergraduate studies/advisor.
Take 14 or more credit(s) from the following:
• ESCI 3001 - Earth Materials (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)

Substitutions
Substitutions can be made after consultation with the ESci advisor. Though not an exhaustive list, students have previously selected these course(s) as substitutions:
Take 0 or more course(s) from the following:
• ESCI 4701 - Geomorphology (4.0 cr)
• ANTH 3041 - Ecological Anthropology (3.0 cr)
• 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 2016
- 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 adviser 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.

The minor consists of a minimum of 15 credits in 3xxx and 5xxx courses with no more than one course being a directed or independent study. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the Scandinavian program at the University of Minnesota - Twin Cities campus. 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. The program must be approved by the director of undergraduate studies.

Minor Courses

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)

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
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 2016
• Required credits to graduate with this degree: 6 to 8
• This certificate requires an intensive French-language immersion experience. There are 3 options for completing this requirement; (1) An academic study abroad experience of at least 6 weeks that includes at least 1 course taught in French; (2) Completion of an immersion experience preapproved by the French Director of Undergraduate Studies (DUS). 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; (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 French. This experience must be documented through TandemPlus. Since this will involve 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.
• 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
The French Language Advanced-Level Proficiency Certificate consists of six required components: (1) pass the French LPE; (2) complete two upper-division courses taught in French with a grade of C- or higher*; (3) complete a French-language immersion experience; (4) complete the self-assessment instrument; (5) submit a critical reflection essay; (6) obtain a rating of at least Advanced-Low on all four sections of the ACTFL (speaking, writing, listening, and reading). *A note about the coursework: students have two options; (a) FREN 3016 and one pre-approved content-based course; or (b) two pre-approved 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 only 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.

Among French course offerings on campus, only courses numbered 31xx and higher will count as content-based courses, provided they meet the writing requirements indicated above. (French 3101W, Methods in French Studies, 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].)

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.
Two Upper-level Courses Taught in French
Complete two upper-division courses taught in French, for a total of 6-8 credits, with a grade of C- or higher. There are two options for completing this requirement: (1) FREN 3016 (or equivalent abroad) and one pre-approved content-based* course; (2) two pre-approved content-based* courses. *Content-based courses are defined under "Program Requirements" above.

French-language Immersion
Participate in an intensive French-language immersion experience. There are three options for completing this requirement: (1) An academic study abroad experience of at least six weeks that includes at least one course taught in French; (2) Completion of an pre-approved immersion experience; (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 French.

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 2016
- 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
Complete the introductory 4-semester French and Italian sequences, or their equivalents. 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.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 French and Italian.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Majors complete a minimum of 10 upper-division FREN, FRIT and ITAL courses for 31 credits, plus a senior project. At least 4 of the 10 upper division FREN, FRIT and ITAL courses (not counting the senior project) must be taken in the Department of French and Italian at the University of Minnesota - Twin Cities campus.

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

Prerequisites
In select cases, students with advanced proficiency may place out through EPT or LPE examinations.

Beginning and Intermediate French
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- FREN 1001 - Beginning French (5.0 cr)
- FREN 1002 - Beginning French (5.0 cr)
- or FREN 1022 - Accelerated Beginning French (5.0 cr)
- FREN 1003 - Intermediate French (5.0 cr)
- FREN 1004 - Intermediate French (5.0 cr)
Beginning and Intermediate Italian
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
• ITAL 1001 - Beginning Italian (5.0 cr)
• ITAL 1002 - Beginning Italian (5.0 cr)
• ITAL 1003 - Intermediate Italian (5.0 cr)
• ITAL 1004 - Intermediate Italian (5.0 cr)

Major Courses
Take the following 4 courses for a total of 13 credits.
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)

Upper Division French Courses
Take at least 1 additional upper division French course at the 3xxx-5xxx level for at least 3 credits. FREN 30xx and 37xx courses do NOT fulfill the upper division French courses sub-requirement.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• FREN 3xxx
• FREN 4xxx
• FREN 5xxx

Upper Division Italian Courses
Take 9 or more credit(s) from the following:
• ITAL 3xxx
• ITAL 4xxx
• ITAL 5xxx

Upper Division French & Italian Courses
FRIT 5999 does NOT fulfill the upper division French & Italian courses sub-requirement.
Take 6 or more credit(s) from the following:
• FRIT 3xxx
• FRIT 5xxx

Senior Project
The senior project is completed 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. Double majors can complete the senior project in their other CLA major, but are still responsible for taking 31 upper-division major credits.
Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:
Seminar
• FREN 4101W - Seminar in French Studies [WI] (2.0 cr)
  or FREN 4101V - Honors: Seminar in French Studies [WI] (2.0 cr)
Directed Studies
• FREN 4109W - Senior Project in French and Francophone Studies [WI] (2.0 cr)
  or FREN 4110V - Honors Thesis [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 4109W - Senior Project in French and Francophone Studies [WI] (2.0 cr)
• ITAL 3459W - Senior Project [WI] (2.0 cr)
Twin Cities Campus
French Studies B.A.
French & Italian
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• 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 totalling 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. Note: 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.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 French.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Majors must complete a Gateways course (15xx) and a minimum of 10 upper division FREN courses for 30 credits, plus a senior proj. At least 4 of the 10 upper division FREN courses (not counting the senior project) must be taken in the Department of French at the UMN-TC campus.

Up to 18 credits of 3xxx-level coursework from study abroad programs sponsored by or affiliated with the University of Minnesota may be counted towards the major.

FREN 15xx must be taken on the UMN-TC campus or through the May-term Abroad "Gateways" program sponsored by the Department.

Students completing the senior project must do so on the UMN-TC campus.

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

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

Prerequisites
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 (5.0 cr)
FREN 1002 - Beginning French (5.0 cr)
or FREN 1022 - Accelerated Beginning French (5.0 cr)
FREN 1003 - Intermediate French (5.0 cr)
FREN 1004 - Intermediate French (5.0 cr)

Major Courses
Take the following 4 courses for a total of 12 credits.
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)

Upper Division French Courses
All courses are worth 3 credits. FREN 37xx courses do NOT fulfill the upper division French courses sub-requirement. No more than three of the seven courses may be numbered FREN 30xx. FREN 3010 is repeatable up to three times for a total of 9 credits. Note: most FREN linguistics courses require LING 3001 or FREN 3500 as a prerequisite.
Take 7 or more course(s) totaling 21 or more credit(s) from the following:
•FREN 3xxx
•FREN 4xxx
•FREN 5xxx

Senior Project
The senior project is completed in FREN 4101W, 4101V, FREN 4109W or 4110V in the last or next-to-last semester before graduation. Honors students should consult the UHP Sub-plan for their senior project requirements. Research topics must be approved by course instructor. Papers are written in consultation with course instructor or other appropriate faculty. Double majors can complete the senior project in their other CLA major, but must still take a minimum of 30 FREN upper division credits.
Take 1 - 2 course(s) totaling 2 - 4 credit(s) from the following:
Seminar in French Studies
If it is offered, students fulfilling the senior project requirement must take FREN 4101W or FREN 4101V. Honors students seeking Latin honors must take the honors version of the course. Honors students writing summa theses should take a total of 4 credits of senior project by combining 4101V and 4110V in their final year.
• FREN 4101W - Seminar in French Studies [WI] (2.0 cr)
  or FREN 4101V - Honors: Seminar in French Studies [WI] (2.0 cr)

• Directed Studies Senior Project
  • FREN 4109W - Senior Project in French and Francophone Studies [WI] (2.0 cr)
    or FREN 4110V - Honors Thesis [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 - Seminar in French Studies [WI] (2.0 cr)
• FREN 4101V - Honors: Seminar in French Studies [WI] (2.0 cr)
• FREN 4109W - Senior Project in French and Francophone Studies [WI] (2.0 cr)
• FREN 4110V - Honors Thesis [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 2016
• 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.

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

Minor Requirements
Students are required to take 4 semester(s) of French.

The minor is fulfilled by completing a minimum of 6 courses and 18 credits. At least 2 upper-division FREN courses must be taken in the Department of French at the University of Minnesota Twin Cities campus.

Up to 9 credits of 3xxx-level coursework from study abroad programs sponsored by or affiliated with the University of Minnesota can be counted towards the minor.

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.

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

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 (5.0 cr)
- FREN 1002 - Beginning French (5.0 cr)
- or FREN 1022 - Accelerated Beginning French (5.0 cr)
- FREN 1003 - Intermediate French (5.0 cr)
- FREN 1004 - Intermediate French (5.0 cr)

Minor Courses
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:

- 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)

Upper Division French Courses
All courses are worth 3 credits. FREN 37xx courses do NOT fulfill the upper division French courses sub-requirement. Up to one FREN 30xx will count toward the upper division French courses sub-requirement. Note: most FREN linguistics courses require LING 3001 or FREN 3500 as a prerequisite.

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

- FREN 3xxx
• FREN 4xxx
• FREN 5xxx
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 2016
• 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 1 or more course(s) totaling 3 or more 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)

Minor Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• GWSS 4004 - Queering Desire (3.0 cr)
• CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
  or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
• GLBT 3404 - Transnational Sexualities [GP] (3.0 cr)
  or GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
• GLBT 3472 - Gay Men and Homophobia in American Culture (3.0 cr)
  or CSCL 3472 - Gay Men and Homophobia in American Culture [DSJ] (3.0 cr)
• GWSS 4403 - Queering Theory (3.0 cr)
  or GLBT 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 4 or more 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, and Bisexual People in Families (3.0 cr)
• GLBT 3610 - Topics in GLBT Studies (3.0 cr)
• SOC 4090 - Topics in Sociology (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)
• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
  or SOC 4521H - Honors: Love, Sex, & Marriage (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)
• 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
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 2016
- 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

Preparatory Courses
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
- GWSS 1002 - Politics of Sex [SOCS, DSJ] (3.0 - 4.0 cr)
- GWSS 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
- GWSS 1004 - Screening Sex: Visual and Popular Culture [AH] (3.0 cr)
- GWSS 1005 - Engaging Justice [CIV] (3.0 cr)
- GWSS 1006 - Skin, Sex, and Genes [SOCS, TS] (3.0 cr)
- GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)

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

Major Course
Take 1 of the following courses for 3 credits.
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)  

Electives  
At least 3 electives courses must be at the 4xxx or 5xxx level.  
Take 8 or more 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 3306 - Pop Culture Women [AH, DSJ] (3.0 cr)  
• GWSS 3307 - Feminist Film Studies [AH, DSJ] (3.0 cr)  
• GWSS 3390 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)  
• GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)  
• GWSS 3490 - Topics: Political Economy and Global Studies (3.0 cr)  
• GWSS 3502 - Transgender Studies Now [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)  
  or 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)  
  or GWSS 3004V - Honors: 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 3305 - Queer Cinema [AH] (3.0 cr)  
  or GLBT 3305 - Queer Cinema [AH] (3.0 cr)  
• GWSS 3306 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)  
  or GLBT 3306 - Gender, Work, Labor [SOCS, GP] (3.0 cr)  
• GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)  
  or AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)  
• GWSS 3307 - Jewish Women in the United States [HIS, DSJ] (3.0 cr)  
• GWSS 3403W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)  
• GWSS 3405 - Oral Traditions in U.S. Women’s History (3.0 cr)  
• GWSS 3407 - Women in Early and Victorian America: 1600-1890 [HIS, DSJ] (3.0 cr)  
  or HIST 3347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)  
• GWSS 3408 - Women in Modern America (3.0 cr)  
  or HIST 3348 - Women in Modern America (3.0 - 4.0 cr)  
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)  
  or AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)  
• GWSS 3410 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)  
  or CHIC 3212 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)  
• GWSS 3412 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)  
  or AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)  
• GWSS 3413 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)  
  or HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)  
  or GLOS 3934 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)  
• GWSS 3414 - 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)  
  or GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)  
• GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)  
  or HIST 3349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)  
• GWSS 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)  
  or HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)  
• GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)  
• GWSS 3681H - Gender and the Family in the Islamic World (3.0 cr)  
• RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)  
  or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)  
• GWSS 3305 - Queer Cinema [AH] (3.0 cr)  
  or GLBT 3305 - Queer Cinema [AH] (3.0 cr)  
• GWSS 3307 - Jewish Women in the United States [HIS, DSJ] (3.0 cr)  
• AAS 3409 - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)  
• GWSS 3410 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)  
• GWSS 3414 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)  
  or HIST 3424 - 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)  
• GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)  
• HIST 3349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)  
• GWSS 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)  
• HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)  
• GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)  
• RELS 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)  
• GWSS 3305 - Queer Cinema [AH] (3.0 cr)  
• GLBT 3305 - Queer Cinema [AH] (3.0 cr)  

4xxx and 5xxx-Level Courses  
Take 3 or more course(s) from the following:  
• 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 4402 - Rebels, Radicals, and Revolutionaries: History of Western Feminisms (3.0 cr)
GWSS 4404 - Gender, Nation, and Literature in Latin America (3.0 cr)
GWSS 4980 - Directed Instruction (1.0 - 8.0 cr)
GWSS 4993 - Directed Study (1.0 - 5.0 cr)
GWSS 4994 - Directed Research (1.0 - 8.0 cr)
GWSS 5190 - Topics: Theory, Knowledge, and Power (3.0 cr)
GWSS 5290 - Topics: Biology, Health, and Environmental Studies (3.0 cr)
GWSS 5390 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)
GWSS 5490 - Topics: Political Economy and Global Studies (3.0 cr)
GWSS 5993 - Directed Study (1.0 - 12.0 cr)
GWSS 5994 - Directed Instruction (1.0 - 12.0 cr)
GWSS 5995 - Directed Research (1.0 - 8.0 cr)
GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
GWSS 4103 - Transnational Feminist Theories [GP] (3.0 cr)
GWSS 5104 - Transnational Feminist Theory (3.0 cr)
GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
AFRO 4406 - Black Feminist Thought (3.0 cr)
AFRO 5406 - Black Feminist Thought (3.0 cr)
GWSS 4406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
GWSS 5406 - Black Feminist Thought in the American and African Diasporas (3.0 cr)
GWSS 4403 - Queering Theory (3.0 cr)
GLBT 4403 - Queering Theory (3.0 cr)

Senior Project
Take 2 of the following courses for a total of 4 credits.
GWSS 4108 - Senior Seminar: Writing (1.0 cr)

with 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:
•AAS 3303W - 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 3002V - Honors: Gender, Race and Class in the U.S. [DSJ, WI] (3.0 cr)
•GWSS 3002W - Gender, Race, and Class in the U.S. [DSJ, WI] (3.0 cr)
•GWSS 3004V - Honors: Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)
•GWSS 3004W - Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)
•GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
•GWSS 3301W - Women Writers [LITR, WI] (3.0 cr)
•GWSS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
•GWSS 3403W - Jewish Women in the United States [HIS, DSJ, WI] (3.0 cr)
•GWSS 3409W - Asian American Women’s Cultural Production [AH, DSJ, WI] (3.0 cr)
•GWSS 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
•GWSS 4303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
•HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (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 2016
• 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 B.A. or a minor in gender, women and sexuality studies, but not both.

Required Course
Take one of the following courses.
GLBT 1001 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)
or GWSS 1002 - Politics of Sex [SOCS, DSJ] (3.0 - 4.0 cr)
or GWSS 1003W - Women Write the World [LITR, GP, WI] (3.0 cr)
or GWSS 1004 - Screening Sex: Visual and Popular Culture [AH] (3.0 cr)
or GWSS 1005 - Engaging Justice [CIV] (3.0 cr)
or GWSS 1006 - Skin, Sex, and Genes [SOCS, TS] (3.0 cr)
or GWSS 1007 - Introduction to GLBT Studies [DSJ, SOCS] (3.0 cr)

Electives
Take 15 or more credit(s) from the following:
• GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
• GWSS 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 3309 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)
• GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
• GWSS 3490 - Topics: Political Economy and Global Studies (3.0 cr)
• GWSS 3502 - Transgender Studies Now [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 3xxx
• 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 4402 - Rebels, Radicals, and Revolutionaries: History of Western Feminisms (3.0 cr)
• GWSS 4404 - Gender, Nation, and Literature in Latin America (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 4xxx
• GWSS 5190 - Topics: Theory, Knowledge, and Power (3.0 cr)
• GWSS 5290 - Topics: Biology, Health, and Environmental Studies (3.0 cr)
• GWSS 5390 - Topics: Visual, Cultural, and Literary Studies (3.0 cr)
• GWSS 5490 - Topics: Political Economy and Global Studies (3.0 cr)
• GWSS 5993 - Directed Study (1.0 - 12.0 cr)
• GWSS 5994 - Directed Instruction (1.0 - 12.0 cr)
• GWSS 5xxx

• 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 3004W - Point/Counterpoint: Contemporary Feminist Debates [CIV, WI] (3.0 cr)
or GWSS 3004V - Honors: 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)
or AAS 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
or ENGL 3303W - Writing Differences: Literature by U.S. Women of Color [LITR, DSJ, WI] (3.0 cr)
• GWSS 3402 - Pleasure, Intimacy and Violence (3.0 cr)
or AFRO 3402 - Pleasure, Intimacy and Violence (3.0 cr)
• GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
or GLBT 3404 - Transnational Sexualities [GP] (3.0 cr)
• GWSS 3406 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)
or GWSS 3406H - Honors: Gender, Work, Labor [SOCS, GP] (3.0 cr)
• GWSS 3407 - Women in Early and Victorian America: 1600-1890 [HIS, DSJ] (3.0 cr)
or HIST 3347 - Women in Early America: 1600-1890 [HIS, DSJ] (3.0 cr)
• GWSS 3408 - Women in Modern America (3.0 cr)
or HIST 3348 - Women in Modern America (3.0 - 4.0 cr)
• GWSS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
or AAS 3409W - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
• GWSS 3410 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
or CHIC 3212 - Chicana Studies: La Chicana in Contemporary Society [AH, DSJ] (3.0 cr)
• GWSS 3412 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
or AMIN 3409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
or AMIN 5409 - American Indian Women: Ethnographic and Ethnohistorical Perspectives [HIS, DSJ] (3.0 cr)
• GWSS 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
or HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
or GLOS 3934 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
• GWSS 3501 - Gay, Lesbian, Bisexual and Transgender Social Movements in the United States (3.0 cr)
or GLBT 3301 - Gay, Lesbian, Bisexual, and Transgender Social Movements in the United States (3.0 cr)
• GWSS 3549 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
or HIST 3349 - U.S. Women's Legal History [HIS, DSJ] (3.0 cr)
• GWSS 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
or HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
• GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
• GWSS 4103 - Transnational Feminist Theories [GP] (3.0 cr)
or GWSS 5104 - Transnational Feminist Theory (3.0 cr)
• GWSS 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
or CHIC 4401 - Chicana/Latina Cultural Studies [AH, DSJ] (3.0 cr)
• 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)
• GWSS 3305 - Queer Cinema [AH] (3.0 cr)
or GLBT 3305 - Queer Cinema [AH] (3.0 cr)
• GWSS 4403 - Queering Theory (3.0 cr)
or GLBT 4403 - Queering Theory (3.0 cr)
Twin Cities Campus

Geographic Information Science Minor

Geography, Environment, Society

College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- 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. Take 2 core courses (7 credits) and 3 elective courses (minimum 9 credits) from the following list.

Core Courses

Take 2 of the following courses for a total of 7 credits.

- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or
- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 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:

- ESPM 3031 - Applied Global Positioning Systems for Geographic Information Systems (3.0 cr)
- ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
- FNRM 3262 - Remote Sensing and Geospatial Analysis of Natural Resources and Environment (3.0 cr)
- FNRM 5412 - Advanced Remote Sensing and Geospatial Analysis (3.0 cr)
- GIS 5571 - ArcGIS I (3.0 cr)
- GIS 5572 - ArcGIS II (3.0 cr)
- HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
- SOIL 4111 - Introduction to Precision Agriculture (3.0 cr)

Take no more than 2 course(s) from the following:

- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- CSCI 4707 - Practice of Database Systems (3.0 cr)
- CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)

Take no more than 2 course(s) from the following:

- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- GEOG 5565 - Geographical Analysis of Human-Environment Systems (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 2016**
- **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 B.A. 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 4 semesters or the equivalent of a second language.
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Special Policies on Counting Courses:
1. Qualifying students may substitute a 5xxx course for a 3xxx course with which it is cross-listed. Students who register for 5xxx-level courses should expect to complete additional work.
2. 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 course requirements.
3. Any given course can only be used to satisfy one requirement for the major.

See major advisor for final approval of individual program.

Students who double-major and choose to complete the senior project in their other major 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 in residence at the University of Minnesota - Twin Cities campus.

Students may earn up to one undergraduate degree in the geography program: a BA or a BS or a minor in Geography.

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 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
- GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (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 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)
- 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 3361W - Geography and Public Policy [WI] (3.0 cr)
  or BSE 3361W - Geography and Public Policy [WI] (3.0 cr)

**Environmental Geography**

Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 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 1 course(s) totaling 3 or more credit(s) from the following:
- GEOG 1502 - Mapping Our World [TS, SOCS] (3.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
- GEOG 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 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)

**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 and electives courses before taking their Ways of Knowing course.
Take exactly 1 course(s) totaling 3 or more 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 adviser to develop a coherent set of electives that meet specific educational goals. See above for special policies on counting courses that apply to this electives requirement. Students may petition to take GIS courses for major credit when pre-requisites have been fulfilled. Note that the following Urban Studies (URBS) courses may not be used to satisfy the electives requirement: URBS 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)
• 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] (4.0 cr)
• GEOG 3431 - Plant and Animal Geography (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 3859 - 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 5393 - 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 5565 - Geographical Analysis of Human-Environment Systems (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 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 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] (4.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
• GEOG 3511 - Principles of Cartography (4.0 cr)
  or GEOG 5511 - Principles of Cartography (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)

Senior Project
Honors students should enroll in the honors version of the option they chose; the Honors thesis fulfills the Senior Project requirement. Students usually complete their senior project during the semester prior to graduation, and should begin planning their senior project with potential faculty mentors and the department adviser during their junior year. Students must submit a copy of their thesis and the senior project tracking form before graduating.

Take 1 or more course(s) totaling 2 or more credit(s) from the following:

**Option 1: Senior Project Seminar Course**
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 Project in Geography**
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: Extra-credit 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 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
- GEOG 3311W - Geography of Health and Health Care [WI] (4.0 cr)
- GEOG 3985V - Senior Project Seminar [WI] (4.0 cr)
- GEOG 3985W - Honors Senior Project Seminar [WI] (4.0 cr)
- URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
- URBS 3955W - Senior Paper Seminar [WI] (2.0 cr)
- GEOG 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)
- GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
- or BSE 3361W - Geography and Public Policy [WI] (3.0 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 2016
- 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 course work in the three primary subfields of the discipline: cultural patterns, environmental processes and global change, and geographic information and mapping sciences. Students pursuing the B.S. 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 B.S. 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
CLA degrees require that students complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

Special Policies on Counting Courses:
1. Qualifying students may substitute a 5xxx course for a 3xxx course with which is cross-listed. Students who register for 5xxx-level courses should expect to complete additional work.
2. 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 course requirements.

3. Any given course can only be used to satisfy one requirement for the major.

See major adviser for final approval of individual program.

A note about the senior project: students who double-major and choose to complete the senior project in their other major are still responsible for taking a minimum of 44 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. At least one upper-division (3xxx-level or above) course in the major must be writing intensive.

Students may earn up to one undergraduate degree in the geography program: a BA or a BS or a minor in geography. Students may pursue additional degrees in the department's public health, urban studies and/or GIS programs alongside their geography degree.

All incoming CLA freshmen 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 1973 - Geography of the Twin Cities [SOCS] (3.0 cr)
• GEOG 3101 - Geography of the United States and Canada [SOCS, TS] (4.0 cr)
• GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GEOG 3361W - Geography and Public Policy [WI] (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 3973 - Geography of the Twin Cities [SOCS] (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] (4.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 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 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 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 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)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3511 - Principles of Cartography (4.0 cr)
  or GEOG 5511 - Principles of Cartography (3.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

Ways of Knowing
The Ways of Knowing requirement provides a theory-intensive overview of the discipline. Students are encouraged to take 3-5 of their breadth and electives courses before taking their Ways of Knowing course.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
• GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)

Supporting Courses
Note: Some courses require prerequisites. Consult the university catalog, or contact the department directly, for more information.
Take 4 or more 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)
- **MATH 1272** - Calculus II (4.0 cr)
  - or MATH 1372 - CSE 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)

### Basic Statistics
Take 0 - 1 course(s) from the following:
- **BIOL 3272** - Applied Biostatistics (3.0 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)

### Physical Sciences
Take 0 - 3 course(s) from the following:
- **BIOC 3021** - Biochemistry (3.0 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 2312H** - Honors Organic Lab (5.0 cr)
- **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)
- **CHEM 1061** - Chemical Principles I [PHYS] (3.0 cr)
  - CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
- **CHEM 1061** - Chemical Principles I [PHYS] (3.0 cr)
  - CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
  - or CHEM 1082 - Chemical Principles II [PHYS] (3.0 cr)
- **CHEM 1066** - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  - or CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
- **CHEM 1076H** - Honors Chemistry II Laboratory [PHYS] (1.0 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)

### Earth Sciences
Take 0 - 3 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)
- **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)
•SOIL 2125 - Basic Soil Science [PHYS, 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)

• Biological & Environmental Sciences
Take 0 - 3 course(s) from the following:
  • ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
  • BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
  • BIOL 1001H - Introductory Biology I: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
  • BIOL 1009 - General Biology [BIOL] (4.0 cr)
  • BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)
  • BIOL 4003 - Genetics (3.0 cr)
  • EEB 4068 - Plant Physiological Ecology (3.0 cr)
  • EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
  • EEB 4611 - Biogeochemical Processes (3.0 cr)
  • GCD 3022 - Genetics (3.0 cr)
  • GCD 3033 - Principles of Cell Biology (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 3807 - Ecology (4.0 cr)
  • BIOL 3811 - Introduction to Animal Behavior (4.0 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)

• Programming & Logic
Take 0 - 3 course(s) from the following:
  • PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
  • PHIL 1005 - Scientific Reasoning (4.0 cr)
  • PHIL 5201 - Symbolic Logic I (4.0 cr)
  • PHIL 5202 - Symbolic Logic II (4.0 cr)
  • CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
or CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
or CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Electives
Students should work with the departmental adviser to develop a coherent set of electives that meet specific educational goals. See above for special policies on counting courses that apply to this electives requirement. Students may petition to take GIS courses for major credit when pre-requisites have been fulfilled. Note that the following Urban Studies (URBS) courses may not be used to satisfy the electives requirement: URBS 1001W, 3001W, 3201, 3202, 3500, & 3955W.
Take 5 or more course(s) totaling 15 or more credit(s) from the following:
  • GEOG 3xxx
  • 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] (4.0 cr)
  • GEOG 3431 - Plant and Animal Geography (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 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 5xxx
  • GEOG 5361 - Geography and Real Estate (4.0 cr)
  • GEOG 5393 - 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 5565 - Geographical Analysis of Human-Environment Systems (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 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 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] (4.0 cr)
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
  or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3511 - Principles of Cartography (4.0 cr)
  or GEOG 5511 - Principles of Cartography (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
  or GEOG 5561 - Principles of Geographic Information Science (4.0 cr)

Senior Project

Honors students should enroll in the honors version of the option they chose; the Honors thesis fulfills the Senior Project requirement. Students usually complete their senior project during the semester prior to graduation, and should begin planning their senior project with potential faculty mentors and the department adviser during their junior year. Students must submit a copy of their thesis and the senior project tracking form before graduating.

Take 1 or more course(s) totaling 2 or more credit(s) from the following:

Option 1: Senior Project Seminar Course

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 Project in Geography

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: Extra-credit 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:
- BSE 3361W - Geography and Public Policy [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)
- GEOG 3374V - Honors: The City in Film [AH, WI] (4.0 cr)
- GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (4.0 cr)
- GEOG 3985V - Honors Senior Project Seminar [WI] (4.0 cr)
- GEOG 3985W - Senior Project Seminar [WI] (4.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
- GEOG 5374 - The City in Film (4.0 cr)
- URBS 3955W - Senior Paper Seminar [WI] (2.0 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)
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 2016
• 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 complete no more than one degree in geography: a BA or a BS or a minor.

Minor Courses

Take 14 or more credit(s) from the following:
• GEOG 3xxx
• 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] (4.0 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 3531 - Numerical Spatial Analysis (4.0 cr)
• GEOG 3561 - Principles of Geographic Information Science (4.0 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 4xxx
• GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
• GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
• GEOG 5xxx
• GEOG 5361 - Geography and Real Estate (4.0 cr)
• GEOG 5393 - 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 5511 - Principles of Cartography (3.0 cr)
• GEOG 5531 - Numerical Spatial Analysis (4.0 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)
• GEOG 5565 - Geographical Analysis of Human-Environment Systems (3.0 cr)
• GEOG 5134 - 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 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] (4.0 cr)  
  or GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (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 2016
• Required credits to graduate with this degree: 6 to 8
• This certificate requires an intensive German-language immersion experience. There are 3 options for completing this requirement:
  (1) An academic study abroad experience of at least 6 weeks that includes at least 1 course taught in German; (2) Completion of an immersion experience preapproved by the German Director of Undergraduate Studies (DUS). 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 German speakers; (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. This experience must be documented through TandemPlus. Since this will involve less contact with German speakers than options 1 and 2, students should only take option 3 if it is the only one available to them.
• 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
The German Language Advanced-Level Proficiency Certificate consists of six required components: (1) pass the German LPE; (2) complete two upper-division courses taught in German with a grade of C- or higher*; (3) complete a German-language immersion experience; (4) complete the self-assessment instrument; (5) submit a critical reflection essay; (6) obtain a rating of at least Advanced-Low on all four sections of the ACTFL (speaking, writing, listening, and reading). "A note about the coursework: students have two options; (a) German 3011 and one pre-approved content-based course; or (b) two pre-approved content-based courses. Content-based courses are taught mostly in German and explore literature, culture, media, or other issues from an academic perspective. See the Certificate website for a list of approved courses. Courses taken abroad will count only if they are taught in German and have a minimum of 10 pages of written work in German with at least one assignment of at least 5 pages in length.

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.

Two Upper-level Courses Taught in German
Complete two upper-division courses taught in German, for a total of 6-8 credits, with a grade of C- or higher. There are two options for completing this requirement: (1) GER 3011 and one pre-approved content-based* course; (2) two pre-approved content-based*
courses. *Content-based courses are defined under "Program Requirements" above.

**German Language Immersion**
Participate in an intensive German language immersion experience. There are three options for completing this requirement; (1) An academic study abroad experience of at least six weeks that includes at least one course taught in German; (2) Completion of an pre-approved immersion experience; (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 2016
- 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 adviser 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 take 4 semester(s) of German.

The minor consists of a minimum of 16 credits in 3xx and 5xx courses with no more than one course being a directed or independent study. 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. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the German program at the University of Minnesota - Twin Cities campus. 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. The program must be approved by the director of undergraduate studies.

Minor Core

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)

Take 9 or more credit(s) from the following:
- GER 3xxx
- GER 5xxx
Twin Cities Campus

German, Scandinavian, Dutch B.A.

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 adviser 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 take 4 semester(s) of Dutch, or Finnish, or German, or Norwegian, or Swedish.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

The German, Scandinavian, Dutch (GSD) major consists of a minimum of 33 upper division (3xxx-5xxx) credits, of which 17 credits must be taken at the University of Minnesota - Twin Cities campus. 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. The major program must be approved by the director of undergraduate studies.

Students may combine coursework across the department's designators, or to concentrate on one area by declaring an emphasis (either German or Scandinavian & Finnish). Students complete two core courses; one course in each of 3 competencies (Advanced Language; Language & Textual Analysis; Critical Literacy & Global Understanding); 15 elective credits (usually five courses); and a senior capstone course. In order to add a German or Scandinavian & Finnish emphasis to your transcript, courses in the competencies, and 3 of 5 electives must be in the appropriate designator(s).

All CLA freshmen must complete the FY experience sequence.

Core Courses
Take the following 2 courses for 6 credits.
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 1 or more course(s) totaling 3 or more credit(s) from the following:
• DTCH 3011W - Conversation and Composition [WI] (3.0 cr)
• FIN 3011 - Advanced Finnish (3.0 cr)
• GER 3011W - Conversation and Composition [WI] (4.0 cr)
• SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)

Language & Textual Analysis
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• 30xx in any language offered by the Department
• DTCH 3310 - Studies in Dutch Literature (3.0 cr)
• GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
• GER 34xx
• GER 37xx
• GER 57xx
• 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 3605 - The Scandinavian Short Story [LITR] (3.0 cr)
• SCAN 3613 - Children’s Literature in Scandinavia [LITR] (3.0 cr)
• SCAN 57xx

**Critical Literacy & Global Understanding**
Take 1 or more 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 3651 - Thinking Environment: Green Culture, German Literature and Global Debates [LITR, ENV] (3.0 cr)
• GER 3655 - Cultures of Control and Surveillance in Germany and the US [HIS, CIV] (3.0 cr)
• SCAN 3501W - Scandinavian Culture Past and Present [GP, WI] (3.0 cr)
• SCAN 3502 - Scandinavian Myths [LITR, GP] (3.0 cr)
• SCAN 3503 - Scandinavian Folklore [LITR, GP] (3.0 cr)
• SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
• SCAN 3614 - Blood on Snow: Scandinavian Thrillers in Fiction and Film [LITR, GP] (3.0 cr)
• SCAN 3634 - Scandinavian Women Writers [LITR, GP] (3.0 cr)
• Study abroad course (requires prior approval from the Director of Undergraduate Studies)

**Electives**
Up to one elective may be taken outside of the GSD department, but must be pre-approved by the departmental adviser or director of undergraduate studies.
Take 15 or more credit(s) from the following:
• DTCH 3xxx
• FIN 3xxx
• GER 3xxx
• GER 5xxx
• SCAN 3xxx
• SCAN 5xxx

**Senior Capstone Course**
For the senior capstone course, students take a GER 5xxx course (except GER 5011) or a SCAN 5xxx course or the Major Project Seminar, GSD 3451W/V. Students who choose to complete a German emphasis or Scandinavian & Finnish emphasis should complete their senior capstone course under the corresponding designator.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• GER 5xxx
• SCAN 5xxx
• GSD 3451V - Honors Major Project Seminar [WI] (3.0 cr)
• GSD 3451W - Major Project 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:
• DTCH 3011W - Conversation and Composition [WI] (3.0 cr)
• GER 3011W - Conversation and Composition [WI] (4.0 cr)
• GER 3104W - Reading and Analysis of German Literature [LITR, WI] (3.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• GSD 3451V - Honors Major Project Seminar [WI] (3.0 cr)
• GSD 3451W - Major Project Seminar [WI] (3.0 cr)
• GER 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)

**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 5xxx courses. Additionally, at least 3 of the 5 required electives must also be SCAN or FIN 3xxx or 5xxx. If a 5xxx course is chosen as the senior capstone, it must be a SCAN or FIN 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 38 to 45
- 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
As preparation for the major, students are encouraged to take 6 credits of related coursework as shown in "Preparatory Courses" listed in the program requirements and take at least one year of foreign language at the college level. 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

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 a language appropriate to their chosen regional concentration.

Students must complete two sub-plans: one thematic and one regional concentration. Detailed information about concentrations is available in the Global Studies handbook. Four semesters of second-language study are required - regardless of demonstrated proficiency - in a language appropriate to the chosen region of concentration. Majors must take at least five courses (15 credits) in order to complete the thematic concentration, and at least four courses (12 credits) to complete the regional concentration. Courses may not be used to fulfill both the theme and the region, and courses taken for the thematic concentration may not focus on the chosen region.

All major coursework, excluding the second-language requirement, must be taken A-F. Second-language courses may be taken S-N only upon approval by a Global Studies advisor. Major courses must be completed with a C- or better.

Majors are required to take a minimum of four upper division courses in the GLOS designator. At least 14 upper division credits in the major must be taken at the University of Minnesota - Twin Cities campus. The Global Studies senior project may be waived for students who double major, and choose to complete the senior project in their other major. This means that students who choose to do this are only required to complete a minimum of 35 approved credits in the Global Studies major. 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.

Optional Preparatory Courses
It is recommended that students take 6 credits of courses from the Optional Preparatory Courses, but these courses are not required and do not count towards the major requirements.
Take 0 or more course(s) from the following:
- 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)
- GEOG 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- GLOS 1112 - Globalization and Social Justice [GP] (3.0 cr)
- HIST 1012W - The Age of Global Contact [HIS, GP, WI] (4.0 cr)
- POL 1025 - Global Politics [SOCS, GP] (4.0 cr)
- GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
  or HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)

Major Courses
Take 2 of the following courses for a total of 8 credits.
GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (4.0 cr)
  or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (4.0 cr)
GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (4.0 cr)

Experiential Learning
Students must participate in a relevant experiential learning opportunity through study abroad, an internship, 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 adviser is required.

Senior Project
Students must complete a senior project that integrates their regional and thematic concentrations. The Global Studies senior project may be waived for students who double major, and choose to complete the senior project in their other major. This means that students who choose to do this are only required to complete a minimum of 35 approved credits in the Global Studies major. Take 1 of the following courses for 3-4 credits.
GLOS 3981W - Major Project Seminar [WI] (3.0 cr)
  or GLOS 3550V - Honors Course: Supervised Research Paper [WI] (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
- 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)
- ANTH 4031W - Anthropology and Social Justice [CIV, WI] (4.0 cr)
- ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)
- CSCL 3621W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, 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)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- HIST 3691W - The British Empire [WI] (3.0 cr)
- LING 3101W - Languages of the World [WI] (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)
- POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
- POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
- ENGL 3001W - Textual Analysis: Methods [WI] (4.0 cr)
  or ENGL 3001V - Honors: Textual Analysis, Methods [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 ARTH 3014V - Art of India [GP, AH, WI] (4.0 cr)
or RELS 3415W - Art of India [AH, GP, 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)
• 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 LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
• GLOS 3415W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
or SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, WI] (3.0 cr)
• GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
• ALL 3637W - Modern Indian Literature [WI] (3.0 cr)
or GLOS 3637W - Modern Indian Literature [WI] (3.0 cr)
• HIST 3727W - History of the Holocaust [WI] (3.0 cr)
or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
or RELS 3521W - History of the Holocaust [WI] (3.0 cr)
or GLOS 3981W - Major Project Seminar [WI] (3.0 cr)
or GLOS 3550V - Honors Course: Supervised Research Paper [WI] (4.0 cr)

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

Environment and Sustainable Development
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.

Environment and Sustainable Development is a thematic concentration. It must be paired with a regional concentration of your choice.

Thematic Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
or GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)

Ways of Knowing Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GEOG 4001 - Modes of Geographic Inquiry (4.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- SW 3901 - Theories and Practices of Social Change Organizing (4.0 cr)
or FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
or FNRM 5131 - Geographical Information Systems (GIS) for Natural Resources (4.0 cr)
or GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
or GEOG 5531 - Numerical Spatial Analysis (4.0 cr)

Thematic Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- APEC 3071 - Microeconomics of International Development (3.0 cr)
- CFAN 3900 - Topics in International Agriculture (1.0 - 4.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
or ESPM 3251 - Natural Resources in Sustainable International Development [GP] (3.0 cr)
or ESPM 3271 - Environmental Policy, Law, and Human Behavior [GP, WV, SOCS] (3.0 cr)
or GEOG 4002W - Environmental Thought and Practice [WI] (3.0 cr)
or GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
or AGRO 4103 - World Food Problems [GP] (3.0 cr)
or APEC 4103 - World Food Problems [GP] (3.0 cr)
•GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)  
  or GEOL 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)  
•GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)  
  or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)  

Global and Cultural Analysis

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 and Cultural Analysis is a thematic concentration. It must be paired with a regional concentration of your choice.

Thematic Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• AMST 3114 - America in International Perspective [DSJ] (3.0 cr)  
• GLOS 3143 - Living in the Global [CIV] (3.0 cr)  
• GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)  
• GLOS 3605 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)  
  or HIST 3705 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)  

Ways of Knowing Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 3003 - Cultural Anthropology (3.0 cr)  
• PA 4101 - Nonprofit Management and Governance (3.0 cr)  
• TRIN 3001 - Introduction to Translation (3.0 cr)  

Thematic Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• AMST 3114 - America in International Perspective [DSJ] (3.0 cr)  
• ANTH 4053 - Economy, Culture, and Critique [SOCS, GP] (3.0 cr)  
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)  
• CSCL 3321W - Theories of Culture [AH, WI] (3.0 cr)  
• CSCL 3621W - Colonial and Postcolonial Literatures and Theory: 1700 to the Present [LITR, GP, WI] (3.0 cr)  
• GLOS 3143 - Living in the Global [CIV] (3.0 cr)  
• GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)  
• GWSS 4103 - Transnational Feminist Theories [GP] (3.0 cr)  
• HIST 3417 - Food in History [HIS, ENV] (3.0 cr)  
• JOUR 3552 - Internet and Global Society [GP] (3.0 cr)  
• LING 3101W - Languages of the World [WI] (3.0 cr)  
• GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)  
  or GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)  
• GLOS 3605 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)  
  or HIST 3705 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)  

Global Political Economy

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 Political Economy is a thematic concentration. It must be paired with a regional concentration of your choice.

Thematic Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• POL 3833 - The United States and the Global Economy (3.0 cr)  
• GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)  
  or GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)  
• GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)  
  or HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)  
• GLOS 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 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)  
  or SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)  

Ways of Knowing Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
  or APEC 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
  or APEC 3006 - Applied Macroeconomics: Government and the Economy (3.0 cr)

Thematic Elective Courses
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)
- APEC 3007 - Applied Macroeconomics: Policy, Trade, and Development [GP] (3.0 cr)
- ECON 4331W - Economic Development [WI] (3.0 cr)
- ECON 4337 - Comparative Economic Systems (3.0 cr)
- ECON 4401 - International Economics [GP] (3.0 cr)
- ECON 4431W - International Trade [GP, WI] (3.0 cr)
- GWSS 3406 - Gender, Labor, and Politics [SOCS, GP] (3.0 cr)
- POL 3477 - Political Economy of Development [SOCS, GP] (3.0 - 4.0 cr)
- POL 3833 - The United States and the Global Economy (3.0 cr)
- POL 4481 - Governments and Markets (3.0 - 4.0 cr)
- GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
  or HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
- GLOS 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 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
  or SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)

Human Rights 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.

Human Rights and Justice is a thematic concentration. It must be paired with a regional concentration of your choice.

Thematic Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
- POL 4485 - Human Rights Policy: Issues and Actors [CIV] (3.0 cr)
- GLOS 5403 - Human Rights Advocacy (3.0 cr)
- GLOS 3412 - What is Equality? [CIV] (3.0 cr)
  or GLOS 5412 - What is Equality? [CIV] (3.0 cr)
- GLOS 4104 - Crime and Human Rights (3.0 cr)
  or GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
  or SOC 4104 - Crime and Human Rights (3.0 cr)
  or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)

Ways of Knowing Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ANTH 3003 - Cultural Anthropology (3.0 cr)
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- POL 3835 - International Relations [SOCS, GP] (3.0 cr)
- POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- SW 3501 - Theories and Practices of Social Change Organizing (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)

Thematic Elective Courses
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)
- 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)
Population, Migration, Identity

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.

Population, Migration, Identity is a thematic concentration. It must be paired with a regional concentration of your choice.

Thematic Breadth Courses

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- HIST 3143 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
- HIST 3179 - History of Population [SOCS, GP] (3.0 cr)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- SOC 3511 - World Population Problems [GP] (3.0 cr)
- SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
- STAT 3141 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 5531 - Numerical Spatial Analysis (4.0 cr)

Ways of Knowing Courses

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- PA 4101 - Nonprofit Management and Governance (3.0 cr)
- PA 5301 - Population Methods & Issues for the United States & Global South (3.0 cr)
- STAT 3101 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 5531 - Numerical Spatial Analysis (4.0 cr)

Thematic Elective Courses

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

- CI 5647 - Teaching Middle and Secondary Immigrant and Refugee Students With Limited Formal Schooling (3.0 cr)
- DANCE 3467W - Dance and Citizenship: Land, Migration, and Diaspora [WJ] (3.0 cr)
- FSOS 3104 - Global and Diverse Families [SOCS, GP] (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- GLOS 3143 - Migrations in Modern Global History [CIV] (3.0 cr)
- HIST 3145 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
- HIST 3179 - History of Population [SOCS, GP] (3.0 cr)
- PA 5452 - Immigration and Public Policy (3.0 cr)
- GLBT 3404 - Transnational Sexualities [GP] (3.0 cr)
- GWSS 3404 - Transnational Sexualities [GP] (3.0 cr)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- AFRO 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- PA 5451 - Immigration, Health and Public Policy (3.0 - 4.0 cr)
- PUBH 6281 - Immigrant Health Issues (3.0 - 4.0 cr)
- SOC 3511 - World Population Problems [GP] (3.0 cr)
- SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)

Africa
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

**Africa** is a regional concentration. It must be paired with a thematic concentration of your choice.

**Breadth Courses**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- AFRO 3141 - Africa (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)

**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 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
  or HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 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 3601W - African Literature [LITR, GP, WI] (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)
- AFRO 3141 - Africa (3.0 cr)
- GLOS 3970 - Topics in African Area Studies (3.0 cr)
- HIST 3435 - History of South Africa from 1910 (3.0 cr)
  or AFRO 3205 - History of South Africa from 1910 (3.0 cr)

**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)
- AFRO 3141 - Africa (3.0 cr)
- GLOS 3970 - Topics in African Area Studies (3.0 cr)
- HIST 3435 - History of South Africa from 1910 (3.0 cr)
  or AFRO 3205 - History of South Africa from 1910 (3.0 cr)
- ALL 3265W - The Fantastic in East Asia: Ghosts, Foxes, and the Alien [LITR, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ARTH 3013 - Introduction to East Asian Art [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)
- 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 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)
- 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)
  or GLOS 3910 - Topics in East Asian Studies (1.0 - 3.0 cr)
- POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (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:
- GLOS 3920 - Topics in European Studies (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)
- 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)
- GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
- or GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
- GLOS 4344 - Europe and its Margins (3.0 cr)
- or ANTH 4344 - Europe and its Margins (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)

Elective Courses

Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- GER 3501 - Contemporary Germany (3.0 cr)
- GLOS 3920 - Topics in European Studies (3.0 cr)
- HIST 3244 - History of Eastern Europe [HIS, GP] (3.0 cr)
- HIST 3691W - The British Empire [WI] (3.0 cr)
- HIST 3721 - Studies in 20th-Century Europe From the Turn of the Century to the End of World War II: 1900-45 (3.0 cr)
- POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
- SCAN 3504 - Emigration, Immigration, Integration: The Nordic Experience [HIS, GP] (3.0 cr)
- SPAN 3212 - Interpreting Modern and Contemporary Spain, 1800-Present (3.0 cr)
- HIST 3727 - History of the Holocaust (3.0 cr)
- or HIST 3727W - History of the Holocaust [WI] (3.0 cr)
- or JWST 3520 - History of the Holocaust (3.0 cr)
- or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
- or RELS 3520 - History of the Holocaust (3.0 cr)
- or RELS 3521W - History of the Holocaust [WI] (3.0 cr)
- GLOS 4344 - Europe and its Margins (3.0 cr)
- or ANTH 4344 - Europe and its Margins (3.0 cr)
- GLBT 3211 - History of Sexuality in Europe (3.0 cr)
- or HIST 3211 - History of Sexuality in Europe (3.0 cr)
- or JWST 3522 - History of Sexuality in Europe (3.0 cr)
- or RELS 3522 - History of Sexuality in Europe (3.0 cr)
- GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
- or GEOG 3161 - 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)

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:
- 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)
- GLOS 3681 - Islam and the West in the Islamic World (3.0 cr)
- or GWSS 3681 - Islam and the West in the Islamic World (3.0 cr)
- or RELS 3716 - Islam and the West in the Islamic World (3.0 cr)
- or SOC 3681 - Islam and the West in the Islamic World (3.0 cr)

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

- ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
- ARTH 3017 - Islamic Culture [AH, GP] (4.0 cr)
- HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
- HIST 3507 - History of Modern Egypt (3.0 cr)
- POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 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)
- 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)
- 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)
- 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 Coexistence in the Middle East and North Africa since 1700 [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)
- HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
  or LAS 3401W - Early Latin America 1825 to Present [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)
- SPAN 3512 - Modern Latin America (3.0 cr)

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

- 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)
- ECON 4311 - Economy of Latin America (3.0 cr)
- GLOS 3930 - Topics in Latin American Studies (3.0 cr)
- PORT 3502W - Global Portuguese: 1900-present [WI] (3.0 cr)
- SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
- SPAN 3512 - Modern Latin America (3.0 cr)
- CHIC 1275 - Service Learning in the Chicano/Latino Community [CIV] (3.0 cr)
  or CHIC 3275 - Service Learning in the Chicano/Latino Community [CIV] (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)
- CHIC 3423 - Central American Revolutions (3.0 cr)
  or HIST 3423 - Central American Revolutions (3.0 cr)
- LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
  or HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 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)
- POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
**Elective Courses**
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- ARTH 3015W - Art of Islam [AH, GP, WI] (4.0 cr)
- ARTH 3017 - Islamic Culture [AH, GP] (4.0 cr)
- HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
- HIST 3507 - History of Modern Egypt (3.0 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)
- HIST 3493 - Islam: Religion and Culture (3.0 cr)
- RELS 3712 - Islam: Religion and Culture (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)
- RELS 3714 - Islam and the Family in the Islamic World (3.0 cr)
- GLOS 3643 - Islam and the West (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)
- RUSS 3404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- RUSS 3407 - Stories and Plays of Anton Chekhov in Translation (3.0 cr)
- RUSS 3421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- RUSS 3422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
- RUSS 3423 - Literature: Tolstoy to the Present in Translation (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)
- 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)
- RUSS 3404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- RUSS 3407 - Stories and Plays of Anton Chekhov in Translation (3.0 cr)
- RUSS 3421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- RUSS 3422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
- RUSS 3423 - Literature: Tolstoy to the Present in Translation (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)
- 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)
- RUSS 3404 - Tolstoy in Translation [LITR, GP] (3.0 cr)
- RUSS 3407 - Stories and Plays of Anton Chekhov in Translation (3.0 cr)
- RUSS 3421 - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- RUSS 3422 - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
- RUSS 3423 - Literature: Tolstoy to the Present in Translation (3.0 cr)

**South Asia**
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Courses must be chosen in consultation with a Global Studies advisor. The following course lists are not exhaustive. Students should consult the list of courses approved by the Global Studies advisor each semester to view additional options. Please note that extra Breadth courses for a specific region or theme may count toward the Electives requirement for the same specific region or theme.

South Asia is a regional concentration. It must be paired with a thematic concentration of your choice.

**Breadth Courses**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- GLOS 3961 - Culture and Society of India [GP, SOCS] (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)
• GLOS 3969 - 20th Century India (3.0 cr)
or HIST 3489 - 20th Century India (3.0 cr)

Elective Courses
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
• ARTH 3017 - Islamic Culture [AH, GP] (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 ARTH 3014V - Art of India [GP, AH, WI] (4.0 cr)
or RELS 3415W - Art of India [AH, GP, WI] (4.0 cr)
or ALL 3637W - Modern Indian Literature [WI] (3.0 cr)
or GLOS 3637W - Modern Indian Literature [WI] (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 3676 - Culture and Society of India [GP, SOCS] (3.0 cr)
or HIST 3489 - 20th Century India (3.0 cr)

Individualized Region
Students are required to complete two sub-plans for the major: one thematic concentration and one regional concentration. Students may choose to design their own individualized regional concentration. All courses must be chosen in consultation with the Global Studies advisor.

Individualized Region is a regional concentration. It must be paired with a thematic concentration of your choice.

Breadth Courses
Take 1 or more course(s) totaling 3 or more credit(s). All courses must be chosen in consultation with the Global Studies adviser.

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 adviser.
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 2016
• Required credits in this minor: 17

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
After completing GLOS 3144 and GLOS 3145, students declare a thematic and regional concentration and complete an additional 9 credits, including at least one theme breadth requirement, one region breadth requirement, and one elective course in their theme or region. Students may earn a BA or a minor in global studies, but not both.

Minor Courses
Take exactly 2 course(s) totaling exactly 8 credit(s) from the following:
• GLOS 3144 - Knowledge, Power, and the Politics of Representation in Global Studies (4.0 cr)
  or GLOS 3144H - Honors: Knowledge, Power, and the Politics of Representation in Global Studies (4.0 cr)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (4.0 cr)

Thematic Breadth Courses
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:
Environment and Sustainable Development
Take 0 or more course(s) from the following:
• GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
  or GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• GLOS 3305 - Life for Sale: Global Debates on Environment, Science, and Society (3.0 cr)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
  or SOC 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)

Global and Cultural Analysis
Take 0 or more course(s) from the following:
• AMST 3114 - America in International Perspective [DSJ] (3.0 cr)
• GLOS 3143 - Living in the Global [CIV] (3.0 cr)
• GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
• GLOS 3605 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)
  or HIST 3705 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)

Global Political Economy
Take 0 or more course(s) from the following:
• POL 3833 - The United States and the Global Economy (3.0 cr)
• GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  or GEOG 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3219 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
  or HIST 3419 - History of Capitalism: Uneven Development Since 1500 (3.0 cr)
• GLOS 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 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
  or SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)

Human Rights and Justice

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Information current as of December 01, 2016
Take 0 or more course(s) from the following:
• GLOS 3401W - International Human Rights Law [GP, WI] (3.0 cr)
• POL 4485 - Human Rights Policy: Issues and Actors [CIV] (3.0 cr)
• GLOS 5403 - Human Rights Advocacy (3.0 cr)
• GLOS 5412 - What is Equality? [CIV] (3.0 cr)
  or GLOS 5412 - What is Equality? [CIV] (3.0 cr)
• GLOS 4104 - Crime and Human Rights (3.0 cr)
  or GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
  or SOC 4104 - Crime and Human Rights (3.0 cr)
  or SOC 4104H - Honors: Crime and Human Rights (3.0 cr)

• Population, Migration, Identity
  Take 0 or more course(s) from the following:
  • GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
  • GLOS 3143 - Living in the Global [CIV] (3.0 cr)
  • HIST 3415 - Migrations in Modern Global History [HIS, GP] (3.0 cr)
  • HIST 3797 - History of Population [SOCS, GP] (3.0 cr)
  • GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
  or GEOG 3381W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
  • SOC 3511 - World Population Problems [GP] (3.0 cr)
  or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)

Regional Breadth Requirement
Take 1 or more course(s) totaling 3 - 4 credit(s) from the following:

Africa
  Take 0 or more course(s) from the following:
  • AFRO 3141 - Africa (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)

East Asia
  Take 0 or more 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)

Europe
  Take 0 or more course(s) from the following:
  • GLOS 3920 - Topics in European Studies (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)
  • 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)
  • GLOS 3921 - Europe: A Geographic Perspective [GP] (3.0 cr)
    or GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
  • GLOS 4344 - Europe and its Margins (3.0 cr)
    or ANTH 4344 - Europe and its Margins (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)

Islamic World
  Take 0 or more course(s) from the following:
  • GLOS 3643 - Islam and the West (3.0 cr)
    or HIST 3546 - Islam and the West (3.0 cr)
  • RELS 3714 - Islam and the West (3.0 cr)
  • GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
    or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
  • RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
    or RELS 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)

Latin America
  Take 0 or more course(s) from the following:
  • ECON 4311 - Economy of Latin America (3.0 cr)
  • HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
    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)
  • SPAN 3512 - Modern Latin America (3.0 cr)
• **Middle East**
  Take 0 or more course(s) from the following:
  • HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
  • POL 4867W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)

• **Russia**
  Take 0 or more course(s) from the following:
  • HIST 3637 - Modern Russia: From Peter the Great to the Present (3.0 cr)
  • RUSS 3512 - Russian Art and Culture [AH, GP] (3.0 cr)
  • HIST 3264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
    or HIST 5264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
  • HIST 3265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
    or HIST 5265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)

• **South Asia**
  Take 0 or more course(s) from the following:
  • GLOS 3961 - Culture and Society of India [GP, SOCS] (3.0 cr)
    or 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)
  • 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 adviser.

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 2016
- 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
Preparatory Courses
Students must complete an introductory course, plus the first year of Greek before declaring the minor.

Introductory Course
Take 1 or more 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
Take the following 2 courses for a total of 10 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 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 take 2 semester(s) of Greek.

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

Minor Courses
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 1 or more course(s) totaling 3 or more 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)

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:
- CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
- CNES 3082W - Greek Tragedy in Translation [LITR, WI] (3.0 cr)
- CNES 3083W - Ancient Comedy [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 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3601 - Sexuality and Gender in Ancient Greece and Rome [AH] (3.0 cr)
• GRK 5100 - Advanced Reading (3.0 cr)
• GRK 5200 - Biblical Greek (3.0 cr)
• GRK 5701 - Prose Composition (3.0 cr)
• HIST 3052 - Ancient Civilization: Greece (3.0 cr)
• CNES 3061 - "Bread and Circuses:" Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
  or HIST 3061 - "Bread and Circuses": Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
• CNES 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or CNES 5071 - Greek and Hellenistic Religions (3.0 cr)
  or RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
  or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• CNES 3072 - The New Testament (3.0 cr)
  or CNES 5072 - The New Testament (3.0 cr)
  or RELS 3072 - The New Testament (3.0 cr)
  or RELS 5072 - The New Testament (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)
• CNES 3204 - The Dead Sea Scrolls (3.0 cr)
  or CNES 5204 - The Dead Sea Scrolls (3.0 cr)
  or JWST 3204 - 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)
• CNES 3525 - Death and the Afterlife in the Ancient World [AH] (3.0 cr)
• GRK 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
  or LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)
Twin Cities Campus

Health Psychology Minor

Psychology
College of Liberal Arts

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- 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. Students may declare the minor with PSY 1001 (or equivalent) completed and PSY 3801 (or a Department of Psychology approved equivalent) in progress.

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. Students must complete a minimum of 9 upper-level psychology credits at the University of Minnesota-Twin Cities.

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 the following 3 courses:
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
- or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
- PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
- or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
- PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
- or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

Upper-Level PSY Courses

Take the following 3 courses:
- PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
- PSY 3206 - Introduction to Health Psychology (3.0 cr)
- PSY 4520 - 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 2016
- 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
Preparatory Courses
Take 1 - 5 course(s) totaling 3 - 25 credit(s) from the following:

**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 Coursework**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- CNES 1001 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
  or RELS 1003 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
- JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- 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)
- CNES 1082 - Jesus in History [HIS] (3.0 cr)
  or CNES 1082H - Honors Course: 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 3201 - The Bible: Context and Interpretation [LITR] (3.0 cr)
- JWST 1034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or RELS 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
  or HIST 1534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
- Other intro course may be taken with DUS approval.

Minor Requirements
Minor Courses
Students take a total of 14 upper-division credits towards the minor. 11 of the 14 credits must be under the HEBR designator. Note: Courses taught by visiting professors from Israel may count towards the Related Coursework course group. See department for final consent.

Take 14 or more credit(s) from the following:

**Upper-Division Hebrew Courses**
Take 11 or more credit(s) from the following:
• HEBR 3xxx
• HEBR 5xxx

**Related Coursework**

Take at most 3 credit(s) from the following:

- HIST 3511 - Muslims and Jews: Conflicts and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
- JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
- JWST 3900 - Topics: Jewish Studies (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)
- 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 - Dead Sea Scrolls (3.0 cr)
  - or RELS 3204 - Dead Sea Scrolls (3.0 cr)
  - or RELS 5204 - 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 RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
- 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)
- HIST 3778 - Jews of Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
  - or JWST 3778 - Jews of Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
  - or RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
- CNES 3202 - Prophecy in Ancient Israel (3.0 cr)
  - or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
- HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
  - or JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
- HIST 3727 - History of the Holocaust (3.0 cr)
  - or HIST 3727W - History of the Holocaust [WI] (3.0 cr)
  - or JWST 3520 - History of the Holocaust (3.0 cr)
  - or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
  - or RELS 3520 - History of the Holocaust (3.0 cr)
  - or RELS 3521W - History of the Holocaust [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)
Twin Cities Campus
History B.A.
History Department
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 35 to 44
- Degree: Bachelor of Arts

History examines the past, seeking to understand the development and changes in human experience from its origins to the present. Historians are interested in documenting and interpreting the past from its diverse theoretical, ideological, and methodological approaches, and at all levels from local history to comparative and global history.

Courses range from surveys to research and intensive seminars, focusing on a rich array of topics - various regions (Europe, Africa, Asia, Latin America, United States), time periods (ancient, medieval, early modern, and modern), methods (social, cultural, economic, quantitative), and comparative themes (gender and sexuality, imperialism, race and ethnicity). Interdisciplinary programs incorporate history into a variety of other programs (history of medicine, global studies, medieval studies, American studies, women's studies).

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

Admission Requirements
CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a B.A. at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your adviser for a list of courses that can or cannot be used to meet this requirement.

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.

Take 11 courses: (2) 1xxx-3xxx survey courses, (8) upper division HIST courses including the senior project, (1) HIST elective from any level 1xxx-5xxx.

Majors must fulfill the following distribution requirements with 1xxx-5xxx HIST courses:
1. Chronological: at least 2 pre-modern (up to 1750) courses, and at least 2 modern-era (since 1750) courses
2. Geographic: at least 1 course in each of 2 different geog. areas (the U.S. and Europe count as one geographic area for this requirement; the second course must be focused on Asia, the Middle East, Africa, or Latin America)
3. World History: at least 1 of the following courses - HIST 1011W or 1011V, 1012W/1012V, 1015W/GLOS 1015W, 1017, 1018, 1019, 1361/3361, 1411W or 3411W, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3546/GLOS 3643/RELS 3714, 3728, 3778, 3797, 5501
4. Area of Concentration: at least 3 up.-division courses in 1 geog. area, or in 1 time period, or on 1 unified theme
5. Writing intensive: at least 3 WI courses with the HIST designator (or cross-listed with HIST), including 1 survey course, 1 up.-division course, and HIST 4010W/V

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Information current as of December 01, 2016
Students who double-major and choose to complete the senior project in their other major are still required to meet History's 11-course requirement (courses must be worth 3 or 4 credits each). 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.

**Survey Courses**

At least one of the two survey courses must be writing intensive.

Take 2 or more course(s) totaling 7 - 8 credit(s) from the following:

Take 0 or more course(s) from the following:

- 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 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 cr)
- HIST 3052 - Ancient Civilization: Greece (3.0 cr)
- HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
- HIST 3101 - Introduction to Medieval History [HIS, GP] (3.0 cr)
- HIST 3152 - British History From the Seventeenth Century [HIS, GP, WI] (4.0 cr)
- HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
- HIST 3505 - Survey of the Modern Middle East [GP] (3.0 cr)
- HIST 3411 - War in History: Preparing and Making War in World History [HIS] (3.0 cr)
- HIST 1361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
- HIST 3361W - 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 3362 - Global History of World War II [HIS] (3.0 cr)
- HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
- AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
- HIST 3432 - Modern Africa in a Changing World [HIS, GP] (3.0 - 4.0 cr)
- HIST 3461 - Introduction to East Asia I: The Imperial Age (3.0 - 4.0 cr)
- 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)
- HIST 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (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)
- MEST 3001 - Introduction to Medieval History [HIS, GP] (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 1411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
- HIST 3151W - British History to the 17th Century [HIS, GP, WI] (4.0 cr)
- HIST 3411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
- HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
- GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
- HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
- LAS 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
- HIST 3402W - Modern Latin America to 1825 [HIS, GP, WI] (4.0 cr)
- LAS 3402W - Modern Latin America to 1825 [HIS, GP, WI] (4.0 cr)
- HIST 3101 - Introduction to Medieval History [HIS, GP] (3.0 cr)
- HIST 1011W - Civilization and the Environment: World History to 1500 [HIS, ENV, WI] (4.0 cr)
- HIST 1012W - The Age of Global Contact [HIS, GP, WI] (4.0 cr)
- HIST 1031W - Europe and the World: Expansion, Encounter, and Exchange to 1500 [HIS, GP, WI] (4.0 cr)
- HIST 1032W - Europe and the World: Expansion, Encounter, and Exchange from 1500 to Present [HIS, GP, WI] (4.0 cr)
- HIST 1301W - Authority and Rebellion: American History to 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1302W - Global America: U.S. History Since 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1307 - Authority and Rebellion: American History to 1865 [HIS] (3.0 cr)
•HIST 1308 - Global America: U.S. History Since 1865 [HIS] (3.0 cr)
•HIST 1361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
•HIST 1362 - Global History of World War II [HIS] (3.0 cr)
•HIST 1411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
•HIST 1842 - The Digital Revolution: Computers in the Making of the Contemporary World (3.0 cr)
•HIST 1xxx
•HIST 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 cr)
or GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 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
Three of these seven courses must be taken in the student's area of concentration, as approved by the undergraduate studies office.
At least one of these seven courses must be writing intensive.
Take 7 - 8 course(s) totaling 21 - 24 credit(s) from the following:

Africa
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
•HIST 3054 - Egypt of the Pharaohs (3.0 cr)
•HIST 5920 - Topics in African History (3.0 cr)
•HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
or AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 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 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 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 Coexistence in the Middle East and North Africa since 1700 [HIS, 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)
•HIST 5513 - 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 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)

Asia
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
•HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
•HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
•HIST 5469 - Historiographies of China, 1000-1700 (3.0 cr)
•HIST 5633 - Socio-Economic History of China (3.0 cr)
•HIST 5940 - Topics in Asian History (1.0 - 4.0 cr)
•HIST 5941 - Readings in Chinese Documents (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)
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)
•HIST 3466 - Religion and Society in Imperial China (3.0 cr)
or ALL 3373 - Religion and Society in Imperial China (3.0 cr)
or RELS 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)
or HIST 5468 - 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST 5295</td>
<td>Social History of Russia and Eastern Europe From the Late 19th Century to the Present</td>
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<td>HIST 5611</td>
<td>New Directions in the Middle Ages, ca. 300-1100</td>
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<td>HIST 5612</td>
<td>New Directions in the Middle Ages, ca. 1100-1500</td>
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<td>HIST 5614</td>
<td>The Medieval Church</td>
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<tr>
<td>HIST 5648</td>
<td>Development of the Western European Legal Tradition</td>
<td>3.0 cr</td>
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<tr>
<td>HIST 5715</td>
<td>Readings in European Women's History: 1450-1750</td>
<td>3.0 cr</td>
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<td>HIST 5720</td>
<td>Society/Politics:Modern Europe</td>
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<td>HIST 5735</td>
<td>European Women's History: 1750 to the Present</td>
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<td>HIST 5777</td>
<td>Proseminar in Habsburg Central Europe</td>
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<td>HIST 5900</td>
<td>Topics in European/Medieval History</td>
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<td>HIST 5905</td>
<td>Topics in European Medieval History</td>
<td>1.0 - 4.0 cr</td>
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<td>HIST 3101</td>
<td>Introduction to Medieval History [HIS, GP]</td>
<td>3.0 cr</td>
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<td>MEST 3001</td>
<td>Introduction to Medieval History [HIS, GP]</td>
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<td>HIST 3102</td>
<td>Medieval Tales and their Modern Echoes [LITR, GP]</td>
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<td>MEST 3002</td>
<td>Medieval Tales and their Modern Echoes [LITR, GP]</td>
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<td>HIST 3211</td>
<td>History of Sexuality in Europe</td>
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<td>GLBT 3211</td>
<td>History of Sexuality in Europe</td>
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<td>HIST 3281</td>
<td>European Intellectual History: The Early Modern Period, Antiquity to 1750</td>
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<td>HIST 5281</td>
<td>European Intellectual History: The Early Modern Period, Antiquity to 1750</td>
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<td>European Intellectual History: The Early Modern Period, Antiquity to 1750</td>
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<td>HIST 3282</td>
<td>European Intellectual History: The Modern Period, 1750-Present</td>
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<td>HIST 3285</td>
<td>Magic and Medicine</td>
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<td>RELS 3625</td>
<td>Magic and Medicine</td>
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<td>HIST 3606</td>
<td>Christians, Muslims, and Jews in the Middle Ages [HIS, GP]</td>
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<td>Christians, Muslims, and Jews in the Middle Ages [HIS, GP]</td>
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<td>RELS 3717</td>
<td>Christians, Muslims, and Jews in the Middle Ages [HIS, GP]</td>
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<td>HIST 3613</td>
<td>History of the Crusades [HIS, GP]</td>
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<td>MEST 3613</td>
<td>History of the Crusades [HIS, GP]</td>
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<td>RELS 3715</td>
<td>History of the Crusades [HIS, GP]</td>
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<tr>
<td>HIST 3615</td>
<td>Women in European History: 1500 to the Present [HIS, GP, WI]</td>
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<td>GWSS 3615</td>
<td>Women in European History: 1500 to the Present [HIS, GP, WI]</td>
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<tr>
<td>HIST 3617</td>
<td>Pagans, Christians, Barbarians: The World of Late Antiquity</td>
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<td>RELS 3543</td>
<td>Pagans, Christians, Barbarians: The World of Late Antiquity</td>
<td>3.0 cr</td>
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<tr>
<td>HIST 3705</td>
<td>From Printing Press to Internet: Media, Communications, and History</td>
<td>3.0 cr</td>
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<td>GLOS 3605</td>
<td>From Printing Press to Internet: Media, Communications, and History</td>
<td>3.0 cr</td>
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<tr>
<td>HIST 3706</td>
<td>Baroque Rome: Art and Politics in the Papal Capital [HIS]</td>
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<td>ARTH 3335</td>
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<td>HIST 3708</td>
<td>The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS]</td>
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<tr>
<td>ARTH 3315</td>
<td>The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS]</td>
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<td>HIST 3722</td>
<td>Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91</td>
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<td>GLOS 3422</td>
<td>20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91</td>
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<td>HIST 3727</td>
<td>History of the Holocaust [WI]</td>
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<td>RELS 3521</td>
<td>History of the Holocaust [WI]</td>
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<tr>
<td>HIST 3729</td>
<td>Nazi Germany and Hitler's Europe</td>
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<tr>
<td>JWST 3729</td>
<td>Nazi Germany and Hitler's Europe</td>
<td>3.0 cr</td>
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<tr>
<td>HIST 3767</td>
<td>Eastern Orthodoxy: History and Culture</td>
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<td>RELS 3611</td>
<td>Eastern Orthodoxy: History and Culture</td>
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<td>HIST 3778</td>
<td>Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries</td>
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<td>RELS 3078</td>
<td>Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries</td>
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</table>
| •Latin America

Take 0 or more course(s) totaling 0 or more credit(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST 3426</td>
<td>Pirates of the Caribbean</td>
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<tr>
<td>HIST 5901</td>
<td>Latin America Proseminar: Colonial</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>HIST 5902</td>
<td>Latin America Proseminar: Modern</td>
<td>3.0 cr</td>
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<tr>
<td>HIST 5950</td>
<td>Topics in Latin American History</td>
<td>1.0 - 4.0 cr</td>
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<tr>
<td>HIST 3401</td>
<td>Early Latin America to 1825 [HIS, GP, WI]</td>
<td>4.0 cr</td>
</tr>
<tr>
<td>LAS 3401W</td>
<td>Early Latin America to 1825 [HIS, GP, WI]</td>
<td>4.0 cr</td>
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</table>
• 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 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 GLOSS 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
or GWSS 3413 - 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)

• Middle East
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
• HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 cr)
• HIST 3052 - Ancient Civilization: Greece (3.0 cr)
• HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
• HIST 3054 - Egypt of the Pharaohs (3.0 cr)
• HIST 3055 - Survey of the Modern Middle East [GP] (3.0 cr)
• HIST 3057 - History of Modern Egypt (3.0 cr)
• HIST 3509 - Approaches to the Study of the Middle East (3.0 cr)
• HIST 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
• HIST 5547 - Empire and Nations in the Middle East (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 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)
or RELS 3494W - Christ in Islamic Thought [WI] (3.0 cr)
or RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
• HIST 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
or CNES 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• HIST 3503 - Ancient Iran (3.0 cr)
or RELS 3709 - Ancient Iran (3.0 cr)
• HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or ALL 3872 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (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 RELS 3079 - Muslims and Jews: Conflict and Coexistence 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 RELS 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or CNES 3942 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
• HIST 3534 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
or JWST 3034 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)
• HIST 3546 - Islam and the West (3.0 cr)
or GLOSS 3643 - Islam and the West (3.0 cr)
or RELS 3714 - Islam and the West (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
or ALL 3883 - The Ottoman Empire [HIS, GP] (3.0 cr)
• HIST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or JWST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
• HIST 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)
or CNES 5051 - Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East (3.0 cr)

• United States
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
• HIST 3801 - The People of Early America: 16th to 18th Centuries (3.0 cr)
• HIST 3803 - Radicalism in Early America (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 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 3853 - Black Protest in 20th Century America (3.0 cr)
• HIST 3869 - Urban American History: Race, Class, Gender, and Sexuality in Urban America (3.0 cr)
• HIST 3878 - American West (3.0 cr)
• HIST 3882 - U.S. and the World (3.0 cr)
• HIST 5379 - Problems in Early American History (3.0 cr)
• HIST 5381 - Minnesota History Workshop (3.0 - 4.0 cr)
• HIST 5642 - U.S. Legal History (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 - American Foreign Relations to 1895 (3.0 cr)
• HIST 5890 - Problems in American Indian History (3.0 cr)
• HIST 5910 - Topics in U.S. History (1.0 - 4.0 cr)
• HIST 3837 - Minnesota History (3.0 cr)
• HIST 3001 - Public History (3.0 cr)
• HIST 3212 - Dissident Sexualities in U.S. History (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 3446 - Chicana/o History II: WWII, El Movimiento, and the New Millennium [HIS, DSJ] (3.0 cr)
• HIST 3802 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
• HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
• HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
• HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
• HIST 3864 - African American History, 1619-1865 (3.0 - 4.0 cr)
• HIST 3865 - African American History: 1685 to Present (3.0 cr)
• HIST 3867 - 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 5831 - Cultural Fallout: The Cold War and its Legacy: Readings (3.0 cr)
• HIST 5831 - Cultural Fallout: The Cold War and its Legacy, Readings (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 3414 - Missionary Encounters: Evangelism and Empire in the Early Modern World (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 3797 - History of Population [SOCS, GP] (3.0 cr)
Senior Project
The senior project is completed in HIST 4010W. Honors students should enroll in HIST 4010V. While students may take HIST 4010W/V up to four times with a change in topic, they may only take it in their junior or senior years. Students may elect to count as their senior project any 4010W/V paper they wish, so long as the paper receives a grade of C- or better.

HIST 4010W - Research Seminar [WI] (4.0 cr)

or HIST 4010V - Honors: Research Seminar [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 0 - 1 course(s) from the following:

- HIST 3151W - British History to the 17th Century [HIS, GP, WI] (4.0 cr)
- HIST 3411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 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 3980W - Supplemental Writing in History [WI] (1.0 cr)
- HIST 4010V - Honors: Research Seminar [WI] (4.0 cr)
- HIST 4010W - Research Seminar [WI] (4.0 cr)
- HIST 3067W - Archaeology of Prehistoric Europe [HIS, WI] (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 3727W - History of the Holocaust [WI] (3.0 cr)
  or RELS 3521W - History of the Holocaust [WI] (3.0 cr)
  or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
- HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
  or GWSS 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
- HIST 3494W - Chris in Islamic Thought [WI] (3.0 cr)
  or RELS 3718W - Chris in Islamic Thought [WI] (3.0 cr)
- HIST 3868W - Race, War, and Race Wars in American History [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)
  or AFRO 3875W - Comparative Race and Ethnicity in U.S. History [HIS, DSJ, WI] (3.0 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 2016
- Required credits in this minor: 14

History examines the past, seeking to understand the development and changes in the human experience from its origins to the present. Historians are interested in documenting and interpreting the past from diverse theoretical, ideological, and methodological approaches and at all levels from local history to comparative and global history.

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

Minor Requirements
Take a minimum of five history courses. These courses must be in at least two different cultural/geographic areas and taken A-F.
Students may count 1xxx-level coursework toward the minor, but at least 14 credits must be at the upper division level (3xxx or higher).
Students may earn a BA or a minor in history, but not both.

Minor Courses
Take 5 classes, including at least 14 upper division credits. At least 2 different cultural/geographic areas must be covered in the coursework.
Take 5 or more course(s) from the following:

1xxx Level
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
- HIST 1000 - Visions of the Past: Thematic Approaches to Understanding History (3.0 - 4.0 cr)
- HIST 1011W - Civilization and the Environment: World History to 1500 [HIS, ENV, WI] (4.0 cr)
- HIST 1012W - The Age of Global Contact [HIS, GP, WI] (4.0 cr)
- HIST 1031W - Europe and the World: Expansion, Encounter, and Exchange to 1500 [HIS, GP, WI] (4.0 cr)
- HIST 1032W - Europe and the World: Expansion, Encounter, and Exchange from 1500 to Present [HIS, GP, WI] (4.0 cr)
- HIST 1301W - Authority and Rebellion: American History to 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1302W - Global America: U.S. History Since 1865 [HIS, DSJ, WI] (4.0 cr)
- HIST 1307 - Authority and Rebellion: American History to 1865 [HIS] (3.0 cr)
- HIST 1308 - Global America: U.S. History Since 1865 [HIS] (3.0 cr)
- HIST 1361W - World War I: A Global History [HIS, TS, WI] (3.0 cr)
- HIST 1362 - Global History of World War II [HIS] (3.0 cr)
- HIST 1411W - The Family from 10,000 BCE to the Present [HIS, CIV, WI] (4.0 cr)
- HIST 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 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 1094 - Introduction to Jewish History and Cultures [HIS] (3.0 cr)

Upper Division
5xxx-level classes may be taken with instructor permission only.
Take 4 or more course(s) including 2 or more sub-requirements(s) from the following:

Africa
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
- HIST 3054 - Egypt of the Pharaohs (3.0 cr)
- HIST 5920 - Topics in African History (3.0 cr)
- HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
  or AFRO 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 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)
or AFRO 3001 - West African History: Early Times to 1800 [GP] (3.0 cr)
or 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)
or 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)
or HIST 3511 - Muslims and Jews: Conflict and Coexistence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Coexistence 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 RELS 3721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
or HIST 3515 - 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)
or HIST 3516 - West African History: 1800 to Present [GP] (3.0 cr)
or AFRO 3002 - West African History: 1800 to Present [GP] (3.0 cr)
• HIST 3457 - Muslims and Jews: Conflict and Coexistence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
or RELS 3079 - Muslims and Jews: Conflict and Coexistence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
• HIST 3458 - West African History: 1800 to Present [GP] (3.0 cr)
or AFRO 3002 - West African History: 1800 to Present [GP] (3.0 cr)
• HIST 3459 - 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 3512 - 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)
• HIST 3514 - 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)
• HIST 3516 - 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 3517 - 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)
• HIST 3518 - 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)
• 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)

• Asia
• HIST 3477 - Samurai, Geisha, and How They Became Japanese (3.0 cr)
or HIST 3485 - History of Southeast Asia [GP] (3.0 cr)
or HIST 5469 - Historiographies of China, 1000-1700 (3.0 cr)
or HIST 5633 - Socio-Economic History of China (3.0 cr)
or HIST 5940 - Topics in Asian History (1.0 - 4.0 cr)
or 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)
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 3462 - From Subjects to Citizens: The History of East Asia From 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or HIST 3462H - Honors: From Subjects to Citizens: The History of East Asia from 1500 to the Present [HIS, GP] (3.0 - 4.0 cr)
or EAS 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 3466 - Religion and Society in Imperial China (3.0 cr)
or ALL 3373 - Religion and Society in Imperial China (3.0 cr)
or HIST 3467 - Religion and Society in Imperial China (3.0 cr)
or EAS 3467 - Social Change in Modern China (3.0 cr)
or HIST 3468 - Social Change in Modern China (3.0 cr)
or ALL 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 EAS 3471 - Modern Japan, Meiji to the Present (1868-2000) [HIS] (3.0 cr)
or 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)
or EAS 3457 - War and Peace in Japan Through Popular Culture (4.0 cr)
or HIST 3478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or HIST 5478 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 cr)
or GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 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 - 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 3483 - Hmong History Across the Globe (3.0 cr)
or AAS 3483 - Hmong History Across the Globe (3.0 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 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)
or HIST 3489 - 20th Century India (3.0 cr)
or GLOS 3969 - 20th Century India (3.0 cr)
or HIST 3492 - Hinduism (3.0 cr)
or ALL 3671 - Hinduism (3.0 cr)
or ALL 5671 - Hinduism (3.0 cr)
or RELS 3671 - Hinduism (3.0 cr)
or GLOS 3671 - Hinduism (3.0 cr)
or HIST 3503 - Ancient Iran (3.0 cr)
or RELS 3709 - Ancient Iran (3.0 cr)
HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or ALL 3872 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)

**Europe**

Take 0 or more course(s) totaling 0 or more credit(s) from the following:

- HIST 3052 - Ancient Civilization: Greece (3.0 cr)
- HIST 3053 - Ancient Civilization: Rome [HIS] (3.0 cr)
- HIST 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)
- HIST 3151W - British History to the 17th Century [HIS, GP, WI] (4.0 cr)
- HIST 3152 - British History From the Seventeenth Century [HIS, GP, WI] (4.0 cr)
- HIST 3244 - History of Eastern Europe [HIS, 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 3265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
- HIST 3371 - The Viking World: Story, History, and Archaeology (3.0 cr)
- HIST 3609 - Military History of Medieval Western Europe (3.0 cr)
- HIST 3611 - Medieval Cities of Europe: 500-1500 [HIS, GP] (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 3619 - Chivalry, Crisis, and Revival: Medieval History 1050-1500 (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 3632 - History of Germany; Reformation to Unification: 1500-1871 (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 - Women, Revolution, and War in 20th Century Europe (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 3900 - Topics in Medieval and Modern European History (1.0 - 4.0 cr)
- HIST 5111 - Proseminar in the History of Medieval Europe (3.0 cr)
- HIST 5115 - Medieval Latin Historians (3.0 cr)
- HIST 5264 - Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries (3.0 cr)
- HIST 5265 - 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime (3.0 cr)
- HIST 5271 - The Viking World: Story, History, and Archaeology (3.0 cr)
- HIST 5295 - Social History of Russia and Eastern Europe From the Late 19th Century to the Present (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 5648 - Development of the Western European Legal Tradition (3.0 cr)
- HIST 5715 - Readings in European Women's History: 1450-1750 (3.0 cr)
- HIST 5720 - Society/Politics: Modern Europe (3.0 cr)
- HIST 5735 - European Women’s History; 1750 to the Present (3.0 cr)
- HIST 5777 - Proseminar in Habsburg Central Europe (3.0 cr)
- HIST 5900 - Topics in European/Medieval History (1.0 - 4.0 cr)
- HIST 5905 - Topics in European Medieval History (1.0 - 4.0 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 3102 - Medieval Tales and their Modern Echoes [LITR, 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 3281 - 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)
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 HIST 5282 - 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 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)
•HIST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
  or MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
  or RELS 3715 - History of the Crusades [HIS, GP] (3.0 cr)
•HIST 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
  or GWSS 3615W - Women in European History: 1500 to the Present [HIS, GP, WI] (3.0 cr)
•HIST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
  or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
  or RELS 3715 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
•HIST 3705 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)
  or GLOS 3605 - From Printing Press to Internet: Media, Communications, and History (3.0 cr)
•HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
  or ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
•HIST 3722 - Studies in 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
  or GLOS 3422 - 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-91 (3.0 cr)
•HIST 3727W - History of the Holocaust [WI] (3.0 cr)
  or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
•HIST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
  or JWST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
  or RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)

•Latin America
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
•HIST 3426 - Pirates of the Caribbean (3.0 cr)
•HIST 5901 - Latin America Proseminar: Colonial (3.0 cr)
•HIST 5902 - Latin America Proseminar: Modern (3.0 cr)
•HIST 5950 - Topics in Latin American History (1.0 - 4.0 cr)
•HIST 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
  or LAS 3401W - Early Latin America to 1825 [HIS, GP, WI] (4.0 cr)
•HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
  or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
•HIST 3423 - Central American Revolutions (3.0 cr)
  or CHIC 3423 - Central American Revolutions (3.0 cr)
•HIST 3424 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
  or GLOS 3934 - Women and Gender in Latin American History [GP, HIS] (3.0 cr)
  or GWSS 3413 - 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)

•Middle East
Take 0 or more course(s) totaling 0 or more credit(s) from the following:
•HIST 3051 - Ancient Civilization: Near East and Egypt [HIS] (3.0 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 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 5053 - Doing Roman History: Sources, Methods, and Trends (3.0 cr)
•HIST 5547 - Empire and Nations in the Middle East (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 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 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 3802 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
or RELS 3822 - "Sinners, Saints, and Savages": Religion in Early America (3.0 cr)
- HIST 3804 - Religion and the American Culture Wars [HIS] (3.0 cr)
or AFRO 3852 - Religion and the American Culture Wars [HIS] (3.0 cr)
- HIST 3856 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 3866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
or AFRO 5866 - The Civil Rights and Black Power Movement, 1954-1984 (3.0 cr)
- HIST 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
or AAS 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
or CHIC 3862 - American Immigration History [HIS, DSJ] (3.0 cr)
- HIST 3864 - African American History, 1619-1865 (3.0 - 4.0 cr)
or AFRO 3864 - African American History: 1619 to 1865 (3.0 - 4.0 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 [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 AMST 8231 - 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)

**World**

Take 0 or more course(s) totaling 0 or more credit(s) from the following:
- 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 - Missionary Encounters: Evangelism and Empire in the Early Modern World (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 3797 - History of Population [SOC, GP] (3.0 cr)
- HIST 5962 - Bell Library Research Seminar in Comparative World History, ca. 1000-1800 CE (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)
- HIST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or JWST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (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 2016
- 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

Take a minimum of 14 credits of HSCI 3xxx-5xxx or HMED 3xxx-5xxx. No more than 25 percent of the total credits in the minor program may consist of directed study, directed instruction, or independent study. No more than 25 percent of the total credits may be taken S-N.

Take 14 or more credit(s) from the following:
- HSCI 3xxx
- HSCI 4xxx
- HSCI 5xxx
- HMED 3xxx
- HMED 4xxx
- HMED 5xxx

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Information current as of December 01, 2016
Individually Designed Interdepartmental B.A.

CLA Dean’s Office
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

Students must complete at least 50 approved CLA credits distributed among three of four concentration areas, with at least 40 of the 50 credits at 3xxx or above. The concentrations may be departmental or thematic in composition, and each must include at least 11 credits at 3xxx or above. At least one upper division (3xxx or above) course in the major must be writing intensive.

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. The CLA requirement of 18 credits at or above 3xxx outside the major does not apply.
Students must complete an integrating senior project, earning at least 2 credits in conjunction with the project. Senior project proposals must be approved by faculty and staff advisors the semester before the project is begun. Projects may vary widely in form, depending on a student's program. The project proposal and the project itself must be reviewed and approved by one faculty advisor and two faculty readers.

Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

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

**Major Courses**
Take 50 credits, with at least 40 credits at 3xxx or above in area(s) of concentration, in consultation with an adviser.
Students must complete an integrating senior project, earning at least 2 credits in conjunction with the project.

**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 adviser 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 2016
- 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 (5.0 cr)
- ITAL 1002 - Beginning Italian (5.0 cr)
- ITAL 1003 - Intermediate Italian (5.0 cr)
- ITAL 1004 - Intermediate Italian (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 Italian.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

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

- ITAL 3015 - Reading, Conversation, and Composition (4.0 cr)

Electives
With the approval of the Italian studies undergraduate adviser, courses taken through other departments (e.g., art history, English, history, music) may count toward the Italian Studies B.A. when they pertain to Italian studies topics.

Take 8 or more course(s) totaling 24 or more credit(s) from the following:

- ITAL 3xxx
- ITAL 4xxx
- ITAL 5xxx
- ITAL 3305 - Staging the Self: Theater and Drama in Modern Italy (4.0 cr)
- ITAL 3502 - Making of Modern Italy: From the Enlightenment to the Present. (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 3856 - Negotiating the Terms: Italian Film and Literature (3.0 cr)
- ITAL 3837 - Nation and Narration: Writings in the 19th Century (4.0 cr)
- ITAL 5401 - Mondo di Dante (4.0 cr)
- ARCH 4424 - Renaissance Architecture (3.0 cr)
- ARCH 4425 - Baroque Architecture (3.0 cr)
- FRIT 3803 - New Wave Cinemas: Love, Alienation and Landscape in Post-War Italian and French Film (3.0 cr)
- FRIT 5257 - Passionate Beings: Literary and Medical Problematics in Italy and France from 1800 to the Present (4.0 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)
- MEST 3610 - Topics in Medieval Studies (3.0 - 4.0 cr)
- MUS 5620 - Topics in Opera History (3.0 cr)
- CNES 3104 - Ancient Rome: Kings and Consuls (3.0 cr)
- CNES 3107 - Age of Constantine the Great (3.0 cr)
- ARTH 3355 - Baroque Rome: Art and Politics in the Papal Capital [HIS] (3.0 cr)
- ARTH 5355 - 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)
- ARTH 3315 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800. [AH, TS] (3.0 cr)
- HIST 3708 - The Age of Curiosity: Art and Knowledge in Europe, 1500-1800 [AH, TS] (3.0 cr)
- ENGL 3040 - Studies in Film (3.0 cr)
- ENGL 3040H - Honors: Studies in Film (3.0 cr)
- CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
- RELS 3541 - Age of St. Augustine of Hippo (3.0 cr)

Senior Project
The senior project involves research and writing in Italian on an approved issue or theme. Projects can include scholarly paper, or creative artistic piece 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.

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

- Students who complete the senior project in another CLA department must take one more elective to reach the 30-credit minimum for the BA.
- 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 2016
- 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.

Students must complete Italian language study equivalent to four semesters (intermediate level) before beginning the minor.

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 (5.0 cr)
- ITAL 1002 - Beginning Italian (5.0 cr)
- ITAL 1003 - Intermediate Italian (5.0 cr)
- ITAL 1004 - Intermediate Italian (5.0 cr)

Minor Requirements
Students are required to take 4 semester(s) of Italian.

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

Minor Courses
With the approval of the Italian studies undergraduate adviser, 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.
ITAL 3015 - Reading, Conversation, and Composition (4.0 cr)
Take 12 or more credit(s) from the following:
- ITAL 3xxx
- ITAL 4xxx
- ITAL 5xxx
Twin Cities Campus
Jewish Studies B.A.
CLA Dean's Office
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 28 to 48
• Degree: Bachelor of Arts

This broad, interdisciplinary field studies the civilization of the Jewish people from its beginning in biblical antiquity to the present. The diverse quality of Jewish civilization and the unifying forces of its religion and language offer ample material for the study of continuity, adaptation, and change.

The undergraduate program offers courses in the Bible, Jewish history, Jewish literature, midrash, Jewish philosophy, medieval and modern Jewish studies, Talmud, and rabbinics. The program has links with the Departments of American Studies, Sociology, History, English, German, Music, and Political Science. The University’s Center for Holocaust and Genocide Studies offers courses related to the Nazi Holocaust and its aftermath.

Study abroad in Israel or Europe is encouraged as a valuable augment to the major; consult the Learning Abroad Center at (612) 626-9000 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.

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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.

CLA B.A. degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level. Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper-division credits outside the major.

A minimum of 13 upper-division credits must be completed on the University of Minnesota - Twin Cities campus, or through sponsored study abroad programs.

Students may earn a B.A. 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)
Introductory Course
Take 1 of the following courses for 3 credits.
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)
Major Courses
Take 7 or more courses totaling 21 or more credits from the Major Courses course groups. 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 Major Courses 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:
  • 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 - Prophecy in Ancient Israel (3.0 cr)
or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)
or RELS 3202 - 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 3204 - Dead Sea Scrolls (3.0 cr)
or RELS 3204 - Dead Sea Scrolls (3.0 cr)
or RELS 5204 - Dead Sea Scrolls (3.0 cr)
  • CNES 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or JWST 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
or RELS 3205 - Women, Gender, and the Hebrew Bible [AH] (3.0 cr)
  • CNES 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or JWST 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or RELS 3504 - Ancient Jewish Culture and Identity (3.0 cr)
  • JWST 3603 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
or RELS 3719 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
or SPAN 3603 - Jews and Muslims in Medieval Iberia [AH] (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 Course
Take 0 or more course(s) from the following:
  • 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 RELS 3502 - Ancient Israel: From Conquest to Exile (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 3712 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)

or HIST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or JWST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (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)

• Additional Course
Take 0 or more course(s) from the following:

• HEBR 3090 - Advanced Modern Hebrew (3.0 cr)
• HEBR 5090 - Advanced Modern Hebrew (3.0 cr)
• HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
• JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
• JWST 3900 - Topics: Jewish Studies (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)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (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 3727 - History of the Holocaust (3.0 cr)
or HIST 3727W - History of the Holocaust [WI] (3.0 cr)
or JWST 3520 - History of the Holocaust (3.0 cr)
or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
or RELS 3520 - History of the Holocaust (3.0 cr)
or RELS 3521W - History of the Holocaust [WI] (3.0 cr)
• HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)

Senior Project
Choose from JWST 4000W (4 credits) or JWST 4001W (1 credit, taken concurrently with an approved upper-division course in the major).

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

• JWST 4000W - Final Project, Writing Intensive [WI] (4.0 cr)
• JWST 4001W - Final Project, Writing Intensive [WI] (1.0 cr)

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

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

• JWST 4000W - Final Project, Writing Intensive [WI] (4.0 cr)
• JWST 4001W - Final Project, Writing Intensive [WI] (1.0 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 2016
• Required credits in this minor: 18 to 26

The Jewish studies minor allows students to develop an additional concentration in the academic study of Jewish culture and civilization throughout history. The minor, which recognizes the diversity and international aspect of the Jewish experience, reinforces any disciplinary specialization and contributes a comparative focus. Students choose from among the full range of JWST courses in Jewish history, Bible, Talmud, rabbinics, Jewish literature, and medieval and modern Jewish studies.

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 1 of the following courses for 3 credits.
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)

Minor 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:
• 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 - Dead Sea Scrolls (3.0 cr)
or JWST 5204 - Dead Sea Scrolls (3.0 cr)
or RELS 3204 - Dead Sea Scrolls (3.0 cr)
or RELS 5204 - 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)
or RELS 3502 - Ancient Israel: From Conquest to Exile (3.0 cr)
• 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)
• HIST 3776 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or JWST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (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)
• CNES 3202 - Prophecy in Ancient Israel (3.0 cr)
or JWST 3202 - Bible: Prophecy in Ancient Israel (3.0 cr)

• Jewish History, Culture, Politics and Society in the Modern World Emphasis Area
  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)
  • HIST 3511 - Muslims and Jews: Conflict and Co-existence in the Middle East and North Africa since 1700 [HIS, GP] (3.0 cr)
  • JWST 3601 - Fleeing Hitler: German and Austrian Filmmakers Between Europe and Hollywood [AH] (3.0 cr)
  • JWST 3900 - Topics: Jewish Studies (3.0 cr)
  • POL 4876W - United States Foreign Policy Toward the Middle East [GP, WI] (4.0 cr)
  • POL 4878W - Israeli-Palestinian Situation [GP, WI] (4.0 cr)
  • HIST 3727 - History of the Holocaust (3.0 cr)
or HIST 3727W - History of the Holocaust [WI] (3.0 cr)
or JWST 3520 - History of the Holocaust (3.0 cr)
or JWST 3521W - History of the Holocaust [WI] (3.0 cr)
or RELS 3520 - History of the Holocaust (3.0 cr)
or RELS 3521W - History of the Holocaust [WI] (3.0 cr)
  • HIST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
or JWST 3512 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)

• Intermediate and Advanced Hebrew
  Take at most 10 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)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 48 to 60
- Degree: Bachelor of Arts

The 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 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 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

The school admits a limited number of undergraduates annually. 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

JOUR 1001 - Introduction to Mass Communication [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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

The journalism BA is fulfilled by taking a minimum of 36 credits in the JOUR designator. Total JOUR credits may not exceed 48. For most major degree programs in CLA, students are required to take 18 upper division credits outside the major. For journalism students, at least 12 of these credits must be taken for letter grade and chosen in consultation with a major advisor.

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

Major Courses

Take 1 of the following courses for 3 credits.

- JOUR 3004W - Information for Mass Communication [WI] (3.0 cr)
- or JOUR 3004V - Honors: Information for Mass Communication [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. Students should take:

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

• JOUR 3004W - Information for Mass Communication [WI] (3.0 cr)
• JOUR 3004V - Honors: Information for Mass Communication [WI] (3.0 cr)

Supporting Courses

All SJMC majors must develop an area of expertise outside of journalism. The Supporting Coursework Req. can be fulfilled by completing one of the following options:

Option 1

1) complete a second major in another department

or Option 2

2) complete a minor in another department

or Option 3

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

• 3) develop a series of 3xxx, 4xxx, or 5xxx courses (12 credits total) in different departments but with a common theme, approved by a faculty mentor

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 adviser. Directed studies, special topics and honors major project courses may be used to meet this requirement. With adviser 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)

• International/Multicultural
Take 1 or more course(s) from the following:
• JOUR 3552 - Internet and Global Society [GP] (3.0 cr)
• JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 4801 - Global Communication (3.0 cr)

• Media Effects
Take 1 or more course(s) from the following:
• JOUR 3005 - Mass Media Effects [SOCS] (3.0 cr)
• JOUR 3006 - Visual Communication (3.0 cr)
• JOUR 4251 - Psychology of Advertising (3.0 cr)
• JOUR 4272 - Interactive Advertising (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 - Economics of New Media [TS] (3.0 cr)
• JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
• JOUR 3771 - Mass Media Ethics: Moral Reasoning and Case Studies [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 - Mass Media and Politics (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 3751 - New Media and Culture [AH, TS] (3.0 cr)
• JOUR 3752 - 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 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• JOUR 4721H - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)

Senior Project
The senior project requirement is fulfilled by taking two 4xxx or 5xxx courses as part of the 30-credit Context Courses subrequirement.

Professional Strategic Communication Track
The professional strategic communication track prepares students for careers in advertising, public relations, corporate, non-profit, and advocacy communications.

Strategic Communication Core Course
JOUR 3201 - Principles of Strategic Communication (3.0 cr)

Capstone Course
JOUR 4263 - Strategic Communication Campaigns (3.0 cr)

Professional Courses
Take a total of five courses for fifteen credits, including:
- a minimum of six credits of Execution Skills
- a minimum of six credits of Planning Skills
- at least one of the following: JOUR 4242 or JOUR 4243 or JOUR 4259 or JOUR 4262.

Courses must be chosen in consultation with a major adviser. Professional courses from the Professional Journalism track may also be used (prerequisites must be met).

Take 5 or more course(s) totaling 15 or more 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 3241 - Advertising Strategy and Creative Development (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 three Context courses for a total of 9 credits, one of which must be at the 4xxx or 5xxx level. Courses must be chosen in consultation with a major adviser.

Take exactly 9 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 3551 - Economics of New Media [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 3771 - Mass Media Ethics: Moral Reasoning and Case Studies [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 - Mass Media and Politics (3.0 cr)
• JOUR 3991 - Special Topics in Mass Communication: Context (3.0 cr)
• JOUR 3993 - Directed Study (1.0 - 3.0 cr)
• JOUR 4251 - Psychology of Advertising (3.0 cr)
• JOUR 4272 - Interactive Advertising (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 3751 - New Media and Culture [AH, TS] (3.0 cr)
• JOUR 4733H - Honors Thesis Seminar [WI] (3.0 cr)
• JOUR 4801 - Global Communication (3.0 cr)
• JOUR 4991 - Special Topics in Mass Communication: Context (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 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• JOUR 5725 - Management of Media Organizations (3.0 cr)
• JOUR 5777 - Contemporary Problems in Freedom of Speech and Press (3.0 cr)
• JOUR 5991 - Special Topics in Mass Communication: Context (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)

Senior Project
The senior project requirement is fulfilled by taking JOUR 4263 and 4242 or 4243 or 4259 or 4262.

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.

Journalism Core Course
JOUR 3101 - News Reporting and Writing (3.0 cr)

Professional Courses
Courses must be chosen in consultation with a major adviser. Professional courses from the strategic communication track may also be used (prerequisites must be met). Students must take a total of 15 credits, including two courses at the 4xxx or 5xxx level.

Take exactly 15 credit(s) from the following:
• JOUR 3102 - Multimedia Production and Storytelling (3.0 cr)
• JOUR 3103 - Interactive and Data Journalism (3.0 cr)
• JOUR 3121 - Intermediate News Reporting (3.0 cr)
• JOUR 3155 - Editing for Print and Digital Audiences (3.0 cr)
• JOUR 3173W - Magazine & Feature Writing [WI] (3.0 cr)
• JOUR 3321 - Media Design (3.0 cr)
• JOUR 3451 - TV, Radio and Digital News Reporting (3.0 cr)
• JOUR 4171 - Covering the Arts (3.0 cr)
• JOUR 4193 - Brovold-Sim Community Journalism Practicum: Murphy News Service (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)
• JOUR 5990 - Special Topics in Mass Communication: Professional (3.0 cr)

Context Courses
Take four Context courses for a total of 12 credits, including JOUR 3776 and one course at the 4xxx or 5xxx level. Courses must be chosen in consultation with a major adviser.

JOUR 3776 - Mass Communication Law (3.0 cr)

Take exactly 9 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 - Economics of New Media [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 3771 - Mass Media Ethics: Moral Reasoning and Case Studies [CIV] (3.0 cr)
• JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
• JOUR 3796 - Mass Media and Politics (3.0 cr)
• JOUR 3991 - Special Topics in Mass Communication: Context (3.0 cr)
• JOUR 3993 - Directed Study (1.0 - 3.0 cr)
• JOUR 4251 - Psychology of Advertising (3.0 cr)
• JOUR 4272 - Interactive Advertising (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 3751 - New Media and Culture [AH, TS] (3.0 cr)
• JOUR 4733H - Honors Thesis Seminar [WI] (3.0 cr)
• JOUR 4801 - Global Communication (3.0 cr)
• JOUR 4991 - Special Topics in Mass Communication: Context (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 5606W - Literary Aspects of Journalism [WI] (3.0 cr)
• JOUR 5725 - Management of Media Organizations (3.0 cr)
• JOUR 5777 - Contemporary Problems in Freedom of Speech and Press (3.0 cr)
• JOUR 5991 - Special Topics in Mass Communication: Context (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)

Senior Project
The senior project requirement is fulfilled by taking two 4xxx or 5xxx courses as part of the 15-credit Professional Courses sub-requirement.

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.

**BA/MA Coursework**
Take a total of three courses for nine credits.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- **JOUR 5541** - Mass Communication and Public Health (3.0 cr)
- **JOUR 5542** - Theory-based Health Message Design (3.0 cr)
- Take 1 or more course(s) from the following:
  - **JOUR 5501** - Communication, Public Opinion, and Social Media (3.0 cr)
  - **PSY 5205** - Applied Social Psychology (3.0 cr)
  - **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 2016
• 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
Preparatory Courses
Students must complete an introductory course, plus the first year of Latin before declaring the minor.

Introductory Course
Take 1 or more 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
Take the following 2 courses for a total of 10 credits. 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 take 2 semester(s) of Latin.

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

Minor Courses
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)
• LAT 5705 - Introduction to the Historical-Comparative Grammar of Greek and Latin (3.0 cr)

Electives
Courses in history, art history, medieval studies, and other departments may be used with DUS approval.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• CNES 3081W - Classical Epic in Translation [LITR, WI] (3.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CNES 3083W</td>
<td>Ancient Comedy [WI] (3.0 cr)</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 3107</td>
<td>Age of Constantine the Great (3.0 cr)</td>
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<tr>
<td>CNES 3108</td>
<td>“Bread and Circuses:” Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)</td>
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<tr>
<td>CNES 3109</td>
<td>“Bread and Circuses”: Spectacles and Mass Culture in Antiquity [HIS, CIV] (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>ANTH 3009</td>
<td>Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)</td>
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<tr>
<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>The New Testament (3.0 cr)</td>
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<td>CNES 3072</td>
<td>The New Testament (3.0 cr)</td>
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<tr>
<td>RELS 3072</td>
<td>The New Testament (3.0 cr)</td>
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<tr>
<td>CNES 3073</td>
<td>Roman Religion and Early Christianity (3.0 cr)</td>
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<tr>
<td>RELS 3073</td>
<td>Roman Religion and Early Christianity (3.0 cr)</td>
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<tr>
<td>CNES 3108</td>
<td>Age of St. Augustine of Hippo (3.0 cr)</td>
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<tr>
<td>RELS 3541</td>
<td>Age of St. Augustine of Hippo (3.0 cr)</td>
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<tr>
<td>CNES 3109</td>
<td>The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)</td>
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<td>RELS 3542</td>
<td>The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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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<tr>
<td>CNES 3162</td>
<td>Roman Art and Archaeology [HIS] (3.0 cr)</td>
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<tr>
<td>CNES 3502</td>
<td>Ancient Israel: From Conquest to Exile (3.0 cr)</td>
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<tr>
<td>RELS 3502</td>
<td>Ancient Israel: From Conquest to Exile (3.0 cr)</td>
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<td>ARTH 3502</td>
<td>Ancient Israel: From Conquest to Exile (3.0 cr)</td>
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<tr>
<td>JWST 3502</td>
<td>Ancient Israel: From Conquest to Exile (3.0 cr)</td>
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<tr>
<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>GREEK 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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<tr>
<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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<tr>
<td>ARTH 5188</td>
<td>Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)</td>
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<td>CNES 5188</td>
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</table>
Twin Cities Campus
Linguistics B.A.
Linguistics, Institute of
College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 to 37
- 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

Major Courses
Take 5 of the following courses for a total of 16 credits.
LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
or LING 3001H - Honors: Introduction to Linguistics [SOCS] (4.0 cr)
or LING 5001 - Introduction to Linguistics [SOCS] (4.0 cr)
LING 4201 - Syntax I (3.0 cr)
or LING 5201 - Honors students may take LING 5201 in place of 4201.
LING 4302W - Phonology I [WI] (3.0 cr)
or LING 5302 - Honors students may take LING 5302 in place of 4302W.
LING 5205 - Semantics (3.0 cr)
LING 4202 - Syntax II (3.0 cr)
or LING 5202 - Honors students may take LING 5202 in place of 4202.
or LING 4303 - Phonology II (3.0 cr)
or LING 5303 - Honors students may take LING 5303 in place of 4203.
Electives
No more than 4 credits of LING 1xxx will count. Up to 6 elective credits may be taken in an allied discipline, if approved by the director of undergraduate studies.
Take 15 or more credit(s) from the following:
- LING 1xxx
- LING 2xxx
- LING 3xxx
- LING 4xxx
- LING 5xxx

Senior Project
Take 1-2 courses for a total of 3-6 credits. Students taking LING 4901W must complete the course with at least an S grade. Students seeking honors in Linguistics should take LING 3051H and 3052V for a total of 6 credits.
The usual requirement for this course is the revision and expansion of a paper written for another linguistics course, but it may involve an original research paper. Students complete this paper in a seminar offered each spring semester. The topic should be approved by the course instructor before registration for the seminar.
LING 4901W - Major Project Seminar [WI] (3.0 cr)
or LING 3051H - Honors: Thesis (3.0 cr)
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:
- 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 - Major Project Seminar [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 2016
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.

Minor Courses
Introduction to Linguistics
Take 1 of the following courses for 4 credits.
LING 3001 - Introduction to Linguistics [SOCS] (4.0 cr)
or LING 3001H - Honors: Introduction to Linguistics [SOCS] (4.0 cr)
or LING 5001 - Introduction to Linguistics [SOCS] (4.0 cr)

Upper-division LING Courses
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• LING 4201 - Syntax I (3.0 cr)
or LING 5201 - Honors students may take LING 5201 in place of 4201.
• LING 4302W - Phonology I [WI] (3.0 cr)
or LING 5302 - Honors students may take LING 5302 in place of 4302W.

LING Electives
No more than 4 credits of LING 1xxx may count toward the minor.
Take 6 or more credit(s) from the following:
• LING 1xxx
• LING 3xxx
• LING 4xxx
• LING 5xxx
**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 2016
- 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 course before admission to the program.

A GPA above 2.0 is preferred for the following:

- A 2.50 already admitted to the degree-granting college
- A 2.50 transferring from another University of Minnesota college
- A 2.50 transferring from outside the University

Students seeking a minor in mass communication must consult the School of Journalism and Mass Communication website at http://cla.umn.edu/sjmc/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.

**Required prerequisites**

**Preparatory Course**

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

- JOUR 1001 - Introduction to Mass Communication [SOCS, TS] (3.0 cr)

**Minor Requirements**

Students may earn a BA or a minor in the School of Journalism, but not both.

**Minor Courses**

Take 1 of the following courses for 3 credits.

- JOUR 3004W - Information for Mass Communication [WI] (3.0 cr)
- or JOUR 3004V - Honors: Information for Mass Communication [WI] (3.0 cr)

**Context Courses**

At least 1 Context Course must be 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 - Economics of New Media [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 3771 - Mass Media Ethics: Moral Reasoning and Case Studies [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 - Mass Media and Politics (3.0 cr)
- JOUR 3991 - Special Topics in Mass Communication: Context (3.0 cr)
- JOUR 4251 - Psychology of Advertising (3.0 cr)
• JOUR 4272 - Interactive Advertising (3.0 cr)
• JOUR 4274W - Advertising in Society [WI] (3.0 cr)
• JOUR 3751 - New Media and Culture [AH, TS] (3.0 cr)
• JOUR 4721 - Mass Media and U.S. Society [SOCS, DSJ] (3.0 cr)
• JOUR 4801 - Global Communication (3.0 cr)
• JOUR 4991 - Special Topics in Mass Communication: Context (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)
• JOUR 5991 - Special Topics in Mass Communication: Context (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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 44 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.

Successful completion of Calculus I (1271/1371/1571H), plus Calculus II (1272/1372/1572H), plus one 2xxx level Calculus course: (2243/2373/2574H/3592H) or (2263/2374/2573H/3593H). See equivalent course lists below.

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

Required prerequisites
Required Calculus Courses
Both Calculus I & II plus one 2xxx (or 3xxx level Honors) Calculus course must be successfully completed in order to declare the Math major.

Calculus Sequence

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 Level Calculus Course
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (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)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students must complete a minimum of 6 upper division math courses at 4xxx or above and a senior project (4995 or 4997W). Please note that MATH 3113, 3116, 3118, 4116, 4118, 3283W, 4005, 4067W, 49xx and 59xx math courses do not satisfy upper division mathematics course requirements.

The School of Mathematics will accept STAT 5101 and STAT 5102 as part of the upper division mathematics course requirements. The content of STAT 5101 is the same as MATH 5651, and only one of these courses may be taken, not both. STAT 5102 does not fulfill the analysis requirement. No other courses from other departments may be used as part of the mathematics major course requirements.

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.

CLA freshman must complete the First Year Experience course sequence.

Remaining Required Lower Division Calculus Courses

Multivariable Calculus
MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (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, and Foundations
MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
or MATH 2283 - Sequences, Series, and Foundations (3.0 cr)

Senior Project
Students should consult with a mathematics advisor prior to beginning the senior year to determine possible topic and possible faculty mentor for the senior project.

MATH 4997W - Senior project (Writing Intensive) [WI] (1.0 cr)
or MATH 4995 - Senior Project for CLA (1.0 cr)

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

Take 0 - 1 course(s) from the following:
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4067W - Actuarial Mathematics in Practice [WI] (3.0 cr)
- MATH 4997W - Senior project (Writing Intensive) [WI] (1.0 cr)

Mathematics Options

Mathematics (No Specialization)
Students who do not choose one of the specializations must complete the basic mathematics course requirements listed here.

Take 6 or more course(s) including 3 or more sub-requirements(s) from the following:

Algebra Requirement
Both courses can be from the theoretical algebra list.

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

Theoretical Algebra
Take 1 or more course(s) from the following:
- MATH 4281 - Introduction to Modern Algebra (4.0 cr)
- MATH 5248 - Cryptology and Number Theory (4.0 cr)
- MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

• Applied Algebra
  Take 0 or more course(s) from the following:
  • MATH 4242 - Applied Linear Algebra (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 5485 - Introduction to Numerical Methods I (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 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 5655H - Honors: Introduction to Probability and Statistics (4.0 cr)
  • MATH 5525 - Introduction to Stochastic Processes (4.0 cr)
  • MATH 5581 - Theory of Statistics I (4.0 cr)

• 4xxx/5xxx Level Mathematics Electives Requirement
  Courses from the algebra and analysis lists which have not already taken to fulfill those requirements may be taken to fulfill the electives requirement.
  Take 2 or more course(s) from the following:
  • MATH 4xxx
  • MATH 5xxx
  • STAT 5102 - Theory of Statistics II (4.0 cr)

  -OR-

Actuarial Science Specialization
  Complete the requirements for the actuarial science subplan.

  -OR-

Mathematics Education Specialization
  Complete the requirements for the mathematics education subplan.

  -OR-

Computer Applications Specialization
  Complete the requirements for the computer applications subplan.

  -OR-

Mathematical Biology: Genomics
  Complete the requirements for the genomics subplan.

  -OR-

Mathematical Biology: Physiology
  Complete the requirements for the physiology subplan.

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

Actuarial Science
  The BA mathematics with actuarial specialization requires a minimum of 7 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 mathematics course requirements. It is recommended that students in this specialization should plan for a summer internship after junior year.
Mathematics Courses for the Actuarial Specialization

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 for Actuarial Specialization

Probability and Statistics
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  or STAT 5101 - Theory of Statistics I (4.0 cr)
- MATH 5652 - Introduction to Stochastic Processes (4.0 cr)

Actuarial Mathematics Courses
- 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 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)

Economics and Business Course Requirements

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

Economics and Finance
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 4261 - Introduction to Econometrics (4.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)

Insurance
- 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

A minimum of six upper division (4xxx level and above) Mathematics courses and a minimum of two upper division computer science courses (plus lower division prerequisites) from the courses indicated below are needed to fulfill the requirements for the computer applications specialization. Students who complete the computer applications specialization also meet requirements for a minor in computer science.

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)
  or MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
  or 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
- MATH 4567 - Applied Fourier Analysis (4.0 cr)
  or MATH 4603 - Advanced Calculus I (4.0 cr)
  or MATH 4604 - Advanced Calculus II (4.0 cr)
or MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
or MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
or MATH 5583 - Complex Analysis (4.0 cr)
or MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
or MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
or MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
or MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
or MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
or MATH 5654 - Prediction and Filtering (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)

Additional Computing-Related Mathematics

Mathematical Logic
MATH 5165 - Mathematical Logic I (4.0 cr)

Computer-Related Mathematics Electives

MATH 4242 - Applied Linear Algebra (4.0 cr)
or MATH 5166 - Mathematical Logic II (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)
or MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
or MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
or MATH 5705 - Enumerative Combinatorics (4.0 cr)
or MATH 5707 - Graph Theory and Non-enumerative Combinatorics (4.0 cr)
or MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)

Computer Applications Prerequisite Requirements

Introduction to Computing and Programming Concepts
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
or Introduction to Computer Programming
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)

Upper Division Computer Science Courses
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)

Mathematics Education
Six upper division (4xxx level and above) mathematics courses are required for the mathematics education specialization. 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. Students can take MATH 5651 or STAT 5101, not both. MATH 5651/STAT 5101 can fulfill both the probability and statistics requirement as well as serving as one the analysis requirement courses.

Mathematics Education Specialization 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 requirement 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 5651/STAT 5101 may be used to fulfill this requirement.
- MATH 4653 - Elementary Probability (4.0 cr)

**Analysis Requirements**
- MATH 5651 (or STAT 5101) can fulfill the probability and statistics requirement as well as being one of the analysis requirement courses.
- Take 2 or more course(s) from the following:
  - MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
  - MATH 4603 - Advanced Calculus I (4.0 cr)
  - MATH 4604 - Advanced Calculus II (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)

**Mathematics Elective**
- If a sixth mathematics course is needed after requirements for this specialization have been met, a course from either the algebra or analysis lists or another standard 4xxx or 5xxx level course may be taken.
- Take 0 or more course(s) from the following:
  - MATH 4xxx
  - MATH 5xxx
  - STAT 5102 - Theory of Statistics II (4.0 cr)

**Mathematical Biology: Genomics**
A minimum of six upper division (4xxx level and above) mathematics courses and a minimum of three upper division courses in related areas (plus lower division prerequisites) are needed to fulfill the requirements for the specialization in mathematical biology: genomics. Note that some genomics elective choices have additional prerequisite courses.

**Mathematics Requirements for MathBio - Genomics**

**Mathematical Modeling**
- MATH 4428 - Mathematical Modeling (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 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 Elective**
- If MATH 5445 not is chosen as the Genomics Elective course, then a sixth upper division Mathematics course is needed for this specialization. A course from either the Algebra or Analysis lists or another standard 4xxx or 5xxx level course may be taken to fulfill this requirement for the major.
- Take 0 or more course(s) from the following:
  - MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
Genomics, Computer Science Requirements

Computer Science for Genomics
CSCI 1133, 1933, 2011 plus 4041 may serve as the substitute prerequisite for CSCI 5461.
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)
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Genomics, Biology Requirements

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.

1xxx Level Biology Requirement
Biol 1009H may be substituted.
Biol 1009 - General Biology [BIOL] (4.0 cr)

Genetics Requirement
GCD 3022 - Genetics (3.0 cr)

Genomics Elective Requirement

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.
Take 1 or more course(s) from the following:
• EEB 5042 - Quantitative Genetics (3.0 cr)
• GCD 4143 - Human Genetics (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• Plant Genomics
PBIO 5301 has these additional prerequisite courses: CHEM 1061, CHEM 1065 (lab), CHEM 1062, CHEM 1066 (lab), CHEM 2301; BIOC 3021.
• PBIO 5301 - Plant Genomics (3.0 cr)
• Molecular Biology of Cancer
GCD 4151 has these additional prerequisite courses: CHEM 1061, CHEM 1065 (lab), CHEM 1062, CHEM 1066 (lab), CHEM 2301; BIOC 3021; BIOL 4003.
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)

Mathematical Biology: Physiology

A minimum of six upper division (4xxx level and above) mathematics courses and a minimum of three upper division courses in related areas (plus lower division prerequisites) are needed to fulfill the requirements for the specialization in mathematical biology: physiology. Note that some physiology elective choices have additional prerequisite courses.

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
MATH 4242 - Applied Linear Algebra (4.0 cr)

Analysis Requirements

Physiology Analysis Requirement
Take 1 or more course(s) from the following:
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)

Theory of Probability & Statistics
MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)

**Physiology, Biology, Chemistry Requirements**

**1xxx Level Biology Requirement**
- BIOL 1009H may be substituted.
- BIOL 1009 - General Biology [BIOL] (4.0 cr)

**Physiology Requirement**
- PHSL 3061 - Principles of Physiology (4.0 cr)

**Physics Prerequisites**

**1xxx Level Physics**
- Phys 1301W & 1302W may be substituted.
- 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)

**1xxx Level Chemistry Requirements**
- 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)

**Physiology Electives**

Whichever course - MATH 5445 or MATH 5447 - was not taken to fulfill the mathematics requirement can be taken to fulfill this elective requirement.

Take 1 or more course(s) from the following:
- PHSL 4700 - Cell Physiology (3.0 cr)
- PHSL 5444 - Muscle (3.0 cr)

NSC 5202 has additional prerequisite courses: CHEM 2301, BIOC 3021, NSCI 3101, NSCI 3102.

• NSC 5202 - Theoretical Neuroscience: Systems and Information Processing (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 2016
• Required credits in this minor: 24 to 28

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)

Minor Requirements
Students may earn no more than one undergraduate degree in mathematics: a BA, a BS, or a minor.

Minor Courses
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)

Take 3 courses for a total of 11-12 credits, one course from each of the following groups:
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)

Sequences, Series, and Foundations
MATH 2283 - Sequences, Series, and Foundations (3.0 cr)
or MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
or Qualified honors students can substitute MATH 3592H & 3593H for MATH 2243/2373/2574H, MATH 2263/2374/2573H, and MATH 2283/3283W. See your UHP advisor for final consent. Take the following 2 courses for a total of 10 credits:
MATH 3592H - Honors Mathematics I (5.0 cr)
MATH 3593H - Honors Mathematics II (5.0 cr)

Electives
Selection of MATH course electives for the minor requires department advisor approval.
MATH 4xxx-5xxx
• Take 2 or more course(s) totaling 6 or more credit(s) from the following:
  • MATH 4xxx
  • MATH 5xxx

or Theory of Statistics
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 2016
• 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
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:
• ANTH 5442 - Archaeology of the British Isles (3.0 cr)
• ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
• ARTH 5323 - Art of the Italian Renaissance: 14th-16th Centuries (3.0 cr)
• ARTH 5324 - 15th-Century Painting (3.0 cr)
• ARTH 5765 - Early Chinese Art (3.0 cr)
• ARTH 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)
• ENGL 3101 - Survey of Medieval English Literature (3.0 cr)
• ENGL 3110 - Medieval Literatures and Cultures: Intro to Medieval Studies (3.0 cr)
• ENGL 5110 - Medieval Literatures and Cultures: Intro to Medieval Studies (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 3601 - French Civilization and Culture I (3.0 cr)
• FREN 3611 - Deciphering Courtly Literatures of Medieval France [LITR, GP] (3.0 cr)
• FREN 3711 - Deciphering Courtly Literatures in Medieval France [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 3271 - 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)
• HIST 3431 - Early Africa and Its Global Connections [HIS, GP] (3.0 - 4.0 cr)
• HIST 3454 - West African History: Early Times to 1800 [GP] (3.0 cr)
• HIST 3547 - The Ottoman Empire [HIS, GP] (3.0 cr)
• HIST 3609 - Military History of Medieval Western Europe (3.0 cr)
• HIST 3611 - Medieval Cities of Europe: 500-1500 [HIS, GP] (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 3619 - Chivalry, Crisis, and Revival: Medieval History 1050-1500 (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 3900 - Topics in Medieval and Modern European History (1.0 - 4.0 cr)
• HIST 5111 - Medieval Latin Historians (3.0 cr)
• HIST 5271 - The Viking World: Story, History, and Archaeology (3.0 cr)
• HIST 5281 - European Intellectual History: The Early Modern Period, Antiquity to 1750 (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 I [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 3209 - Literature of Medieval City-States (4.0 cr)
• ITAL 3637 - From Ancient Rome to Renaissance Florence: Siena on the "French Road" (3.0 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 3xxx
• MEST 4xxx
• MEST 5xxx
• MUS 3601W - History of Western Music I [WI] (3.0 cr)
• RELS 3073 - Roman Religion and Early Christianity (3.0 cr)
• RELS 3252 - Art and Archaeology of Early Christianity and the Late Roman Empire (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)
• SCAN 5710 - Topics in Old Norse Literature (3.0 cr)
• SPAN 3503 - Pre-modern Spanish Culture and Thought (3.0 cr)
• SPAN 3703 - Origins and History of Spanish and Portuguese (3.0 cr)
• SPAN 5160 - Medieval Iberian Literatures and Cultures (3.0 cr)
• SPAN 5701 - History of Ibero-Romance (3.0 cr)
• TH 3171 - History of the Theatre: Ancient Greece Through Neo-Classicism (3.0 cr)
• ANTH 3027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
• ANTH 5027W - Archaeology of Prehistoric Europe [HIS, WI] (3.0 cr)
• ARCH 4423 - Gothic Architecture (3.0 cr)
• ARCH 5423 - Gothic Architecture (3.0 cr)
• HIST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
• HIST 3616 - France in the Middle Ages (3.0 cr)
• MEST 3613 - History of the Crusades [HIS, GP] (3.0 cr)
• MEST 3616 - France in the Middle Ages (3.0 cr)
• MEST 5186 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
• CNES 5186 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
• CNES 5786 - Theorizing City and Space in the Mediterranean and Western Asia (3.0 cr)
• CNES 5786 - Theorizing City and Space in the Mediterranean and Western Asia (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3107 - Age of Constantine the Great (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
• CNES 3108 - Age of St. Augustine of Hippo (3.0 cr)
• CNES 3109 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (3.0 cr)
or RELS 3542 - The Age of Justinian and Muhammad (c.500-c.700 A.D.) (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 3466 - Religion and Society in Imperial China (3.0 cr)
or RELS 3373 - Religion and Society in Imperial China (3.0 cr)
• HIST 3504 - The Cultures of the Silk Road (3.0 cr)
or RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or ALL 3872 - The Cultures of the Silk Road (3.0 cr)
• 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)
• HIST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or RELS 3543 - Pagans, Christians, Barbarians: The World of Late Antiquity (3.0 cr)
or MEST 3617 - Pagans, Christians, Barbarians: The World of Late Antiquity (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 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or JWST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
or RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
• JWST 3603 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
or RELS 3719 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
or SPAN 3603 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
• ARTH 3009 - Medieval Art [AH] (3.0 cr)
or MEST 3009 - Medieval Art [AH] (3.0 cr)
• ENGL 3102 - Chaucer (3.0 cr)
or MEST 3102 - Chaucer (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 3101 - Introduction to Medieval History [HIS, GP] (3.0 cr)
or MEST 3001 - Introduction to Medieval History [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)
Twin Cities Campus

Music B. Mus.

School of Music

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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

CLA degrees require students to complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level. This program requires 8 upper-division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Students may earn no more than one undergraduate degree from the School of Music: a B.A. 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 B.A. degree.

Students are required to complete one of the listed sub-plans below. Students may complete more than one sub-plan with prior approval from the School of Music. Note that an additional audition may be required.

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

Music Theory and Ear Training

Take 8 courses for a total of 12 credits.
- 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)

Theory Electives

Note: MUS 5950 must be taken for a minimum of 3 credits in order to count toward this sub-requirement. Take 2 or more 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)

Musico/Ethnomusicology
Take 4 courses for a total of 12 credits.
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 1 course for 2 credits.
MUS 3401 - Basic Conducting (2.0 cr)

Recital
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 a total of 2-4 credits by completing MUS 1151 & 1152 OR MUS 1155.
MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)
or
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)
• 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 2 or more course(s) totaling 2 or more credit(s) from the following:
• MUS 3230 - Chorus (1.0 - 2.0 cr)
• MUS 5240 - University Singers (1.0 cr)
Take 2 or more credit(s) from the following:
• MUS 3440 - Chamber Ensemble (1.0 cr)

Literature and Pedagogy
Take 2 courses for a total of 4 credits
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 a total of 2-4 credits by completing MUS 1151 & 1152 OR MUS 1155.
MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)
or 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)
• Take 8 or more credit(s) from the following:
• 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 4 courses for 10 credits.
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)
• Take 8 or more credit(s) from the following:
• 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 4 courses for a minimum of 7 credits.
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)

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Information current as of December 01, 2016
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 a total of 2-4 credits by completing MUS 1151 & 1152 OR MUS 1155.
MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)
or MUS 1155 - Keyboard Skills I (2.0 cr)

Applied Music
Take 32 or more credit(s) from the following:
Take 8 or more credit(s) from the following:
  • MUSA 1305 - Violin: Music Major (2.0 - 4.0 cr)
  • MUSA 1306 - Viola: Music Major (2.0 - 4.0 cr)
  • MUSA 1307 - Cello: Music Major (2.0 - 4.0 cr)
  • MUSA 1308 - Double Bass: Music Major (2.0 - 4.0 cr)
  • MUSA 1309 - Flute: Music Major (2.0 - 4.0 cr)
  • MUSA 1311 - Oboe: Music Major (2.0 - 4.0 cr)
  • MUSA 1312 - Clarinet: Music Major (2.0 - 4.0 cr)
  • MUSA 1313 - Saxophone: Music Major (2.0 - 4.0 cr)
  • MUSA 1314 - Bassoon: Music Major (2.0 - 4.0 cr)
  • MUSA 1315 - French Horn: Music Major (2.0 - 4.0 cr)
  • MUSA 1316 - Trumpet: Music Major (2.0 - 4.0 cr)
  • MUSA 1317 - Trombone: Music Major (2.0 - 4.0 cr)
  • MUSA 1318 - Euphonium: Music Major (2.0 - 4.0 cr)
  • MUSA 1319 - Tuba: Music Major (2.0 - 4.0 cr)
  • MUSA 1321 - Percussion: Music Major (2.0 - 4.0 cr)
  • Take 8 or more credit(s) from the following:
  • MUSA 2305 - Violin: Music Major (2.0 - 4.0 cr)
  • MUSA 2306 - Viola: Music Major (2.0 - 4.0 cr)
  • MUSA 2307 - Cello: Music Major (2.0 - 4.0 cr)
  • MUSA 2308 - Double Bass: Music Major (2.0 - 4.0 cr)
  • MUSA 2309 - Flute: 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 8 or more course(s) totaling 8 or more 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 a total of 2-4 credits by completing MUS 1151 & 1152 OR MUS 1155.
  •MUS 1151 - Piano: Class Lessons I (2.0 cr)
  •MUS 1152 - Piano: Class Lessons II (2.0 cr)
  •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:
  •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:
  •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 6 courses for 6 credits.
  •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
  •FREN 1001 - Beginning French (5.0 cr)
GER 1001 - Beginning German (5.0 cr)
ITAL 1001 - Beginning Italian (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 2016
- 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 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. This program requires 8 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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 the following 6 courses for a total of 9 credits
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 the following 3 courses for a total of 9 credits.
MUS 3601W - History of Western Music I [WI] (3.0 cr)
MUS 3602W - History of Western Music II [WI] (3.0 cr)

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Information current as of December 01, 2016
MUS 3603W - History of Western Music III [WI] (3.0 cr)

Keyboard
Take 1-2 courses for a total of 2-4 credits. For non-keyboard majors, MUS 1155 may be substituted for MUS 1151-1152. Keyboard majors must consult departmental advisor for appropriate course series.
MUS 1155 - Keyboard Skills I (2.0 cr) or MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)

Research and Senior Project
Take the following course for 1 credit.
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 the following 2 courses for a total of 3 credits.
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 1 of the following courses for 3 credits.
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 1 or more course(s) totaling 1 or more 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 (2.0 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 5562 - Orchestration II (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 the following course for 3 credits.
MUS 1801W - Music, Society, and Cultures [AH, GP, WI] (3.0 cr)

**Applied Lessons**
Take 4 courses for a total of 8 credits.
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• MUSA 12xx (2.0 cr)
Take 2 or more course(s) totaling 4 or more 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:
• MUSA 22xx
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 2016
- Required credits to graduate with this degree: 127 to 129
- Required credits within the major: 99 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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. This program requires 8 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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
- 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)

Creativity and Improvisation
- MUED 5101 - Improvisation and Creativity in the Music Classroom (2.0 cr)

Musicology/Ethnomusicology
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
For non-keyboard majors, MUS 1155 may be substituted for MUS 1151-1152. Keyboard majors must consult departmental advisor for appropriate course series.
MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)
or MUS 1155 - Keyboard Skills I (2.0 cr)

Professional Education
Take 8 courses for at least 11 credits.
Take 8 or more course(s) totaling 11 or more 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)
- CI 5452 - Reading in the Content Areas for Initial Licensure Candidates (1.0 - 2.0 cr)
- EDHD 4xxx
- 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)

Senior Recital
The senior recital is offered for zero credit and most typically taken in the fall of the fourth year.
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.

Major Courses
Note: majors must take MUED 5350 & 5550 for a combined minimum of 10 credits.
MUED 1201 - Introduction to Music Education (2.0 cr)
MUED 5301 - General Music I (3.0 cr)
MUED 5302 - General Music II (3.0 cr)
MUED 3502 - String Techniques and Teaching (2.0 cr)
MUED 3503 - Woodwind Techniques and Teaching (2.0 cr)
MUED 3504 - Brass Techniques and Teaching (2.0 cr)
MUED 3505 - 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 3519 - Advanced Conducting and Repertoire (Instrumental) (2.0 cr)
MUED 5350 - Student Teaching in Classroom Music (4.0 - 8.0 cr)
MUED 5550 - Student Teaching in Instrumental Music (4.0 - 8.0 cr)
MUED 5650 - Student Teaching Seminar (2.0 cr)

Applied Music
Students must complete: MUS 1260 or MUSA 1404; two semesters at 2 credits per term of 12xx courses; two semesters at 2 credits per term of 22xx courses; and three semesters at 2 credits per term of 32xx courses.

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Information current as of December 01, 2016
MUS 1260 - Voice Class (2.0 cr)
or MUSA 1404 - Voice: Music Major Secondary (undergraduate) (2.0 - 4.0 cr)
Take 4 or more 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)

Take 4 or more 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)

Take 6 or more 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 (1 credit per semester) is required for a minimum of six semesters, to be selected in consultation with a departmental advisor. An ensemble course (1 credit per semester) is required for a minimum of one semester.
Take exactly 6 credit(s) from the following:
• MUS 3410 - University Wind Bands (1.0 cr)
• MUS 3420 - Orchestra (1.0 cr)

Ensemble
MUS 3340 - Jazz Ensemble (1.0 cr)
or MUS 3350 - Jazz Combo (1.0 cr)
or MUS 3440 - Chamber Ensemble (1.0 cr)
or MUS 5480 - University Brass Choir (1.0 cr)
or MUS 5490 - Percussion Ensemble (1.0 cr)

Conducting
MUS 3401 - Basic Conducting (2.0 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.

**Major Courses**

Note: majors must take MUED 5350 & 5450 for a combined minimum of 10 credits.

- **MUED 1201** - Introduction to Music Education (2.0 cr)
- **MUED 5301** - General Music I (3.0 cr)
- **MUED 5302** - General Music II (3.0 cr)
- **MUED 5415** - Choral/Vocal Methods and Materials I (3.0 cr)
- **MUED 5416** - Choral/Vocal Methods and Materials II (3.0 cr)
- **MUED 3419** - Advanced Conducting and Repertoire (Choral) (2.0 cr)
- **MUED 5350** - Student Teaching in Classroom Music (4.0 - 8.0 cr)
- **MUED 5450** - Student Teaching in Vocal Music (4.0 - 8.0 cr)
- **MUED 5650** - Student Teaching Seminar (2.0 cr)

**Pedagogy and Diction**

- **MUED 3417** - Style, Pedagogy, and Diction in the Choral Music Classroom I (2.0 cr)
- **MUED 3418** - Style, Pedagogy, and Diction in the Choral Music Classroom II (2.0 cr)

**Ensemble Requirements**

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)

**Conducting**

- **MUS 3401** - Basic Conducting (2.0 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 - 1204**
  - 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 4 or more credit(s) from the following:
    - MUSA 1401 - 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 - 1201**
  - 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 2016
• 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
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) 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
For non-keyboard minors, MUS 1155 may be substituted for MUS 1151-1152. Keyboard minors take 1155.
MUS 1155 - Keyboard Skills I (2.0 cr)
or MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)

Applied Music
Students must take two semesters at 2 credits per term.
Take 4 or more credit(s) from the following:
• MUSA 1301 - Piano: Music Major (2.0 - 4.0 cr)
• MUSA 1302 - Harpsichord: Music Major (2.0 - 4.0 cr)
• MUSA 1303 - Organ: Music Major (2.0 - 4.0 cr)
• MUSA 1304 - Voice: Music Major (2.0 - 4.0 cr)
• MUSA 1305 - Violin: Music Major (2.0 - 4.0 cr)
• MUSA 1306 - Viola: Music Major (2.0 - 4.0 cr)
• MUSA 1307 - Cello: Music Major (2.0 - 4.0 cr)
• MUSA 1308 - Double Bass: Music Major (2.0 - 4.0 cr)
• MUSA 1309 - Flute: Music Major (2.0 - 4.0 cr)
• MUSA 1311 - Oboe: Music Major (2.0 - 4.0 cr)
• MUSA 1312 - Clarinet: Music Major (2.0 - 4.0 cr)
• MUSA 1313 - Saxophone: Music Major (2.0 - 4.0 cr)
• MUSA 1314 - Bassoon: Music Major (2.0 - 4.0 cr)
• MUSA 1315 - French Horn: Music Major (2.0 - 4.0 cr)
• MUSA 1316 - Trumpet: Music Major (2.0 - 4.0 cr)
• MUSA 1317 - Trombone: Music Major (2.0 - 4.0 cr)
• MUSA 1318 - Euphonium: Music Major (2.0 - 4.0 cr)
• MUSA 1319 - Tuba: Music Major (2.0 - 4.0 cr)
• MUSA 1321 - Percussion: Music Major (2.0 - 4.0 cr)
• MUSA 1322 - Harp: Music Major (2.0 - 4.0 cr)
• MUSA 1323 - Guitar: Music Major (2.0 - 4.0 cr)

Ensembles
Take 2 or more course(s) 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 2016
- 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 pre-school 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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. This program requires 8 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

Major Courses
Take all of the following courses for a total of 26 credits.
- 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 all of the following courses for a total of 12 credits.
- 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 all of the following courses for a total of 12 credits.
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**
Take a total of 2-4 credits by completing MUS 1151 & 1152 OR MUS 1155. 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.
MUS 1151 - Piano: Class Lessons I (2.0 cr)
MUS 1152 - Piano: Class Lessons II (2.0 cr)
or MUS 1155 - Keyboard Skills I (2.0 cr)

**Guitar**
Take all of the following courses for a total of 4 credits.
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 the following course for a total of 2 credits.
MUS 3401 - Basic Conducting (2.0 cr)

**Applied Music**
Take a minimum of 14 credits by completing two semesters at 2 credits per semester of 12xx courses; two semesters at 2 credits per semester of 22xx courses; and three semesters at 2 credits per semester of 32xx courses.
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)
- 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)
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)
- 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)

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)
• 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
Take 10-11 credits by completing PSY 1001, PSY 3604, and [BIOL 1010 or KIN 3027]. Students who take BIOL 1010 or KIN 3027 must consult with the departmental advisor prior to enrollment.

• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
• PSY 3604 - Introduction to Abnormal Psychology (3.0 cr)
• BIOL 1010 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
  or KIN 3027 - Human Anatomy for Kinesiology Students (3.0 cr)

Internship
A six-month internship is required upon completion of all coursework. The internship can be taken for 1-13 credits.

• MUED 5855 - Music Therapy Internship (1.0 - 13.0 cr)

Voice and Recital
Take all of the following courses for a total of 2 credits.

• 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)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 2016
- 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 adviser for more information.
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- NOR 1001 - Beginning Norwegian (5.0 cr)
- NOR 1002 - Beginning Norwegian (5.0 cr)
- NOR 1003 - Intermediate Norwegian (5.0 cr)
- NOR 1004 - Intermediate Norwegian (5.0 cr)

Minor Requirements
Students are required to take 4 semester(s) of Norwegian.

The minor consists of a minimum of 16 credits in 3xxx and 5xxx courses with no more than one course being a directed or independent study. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the Scandinavian program at the University of Minnesota - Twin Cities campus. 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. The program must be approved by the director of undergraduate studies.

Minor Courses
Take exactly 1 course(s) totaling exactly 4 credit(s) from the following:
- SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)

Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- SCAN 3xxx
- SCAN 4xxx
- SCAN 5xxx
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 37 to 48
- 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 states 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 states 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 bachelors 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 bachelors 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 take 4 semester(s) of Ojibwe.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper-division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a B.A. at
least 18 of the 48 upper-division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper-division credits outside the major. See your adviser for a list of courses that can or cannot be used to meet this requirement.

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

Major Courses
Take exactly 9 course(s) totaling exactly 31 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)
- OJIB 5204 - Ojibwe Mastery II (3.0 cr)
- AMIN 3141 - American Indian Language Planning (3.0 cr)
- AMIN 3604 - 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 3143 - Language in American Indian Culture and Society (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 3701 - Ojibwe Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 3711 - Dakota Culture and History [HIS, DSJ] (3.0 cr)
- AMIN 4511 - American Indian Political Economy (3.0 cr)
- AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  or POL 1019 - Indigenous Peoples: A Global Perspective [GP] (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] (4.0 cr)
  or RELS 3321 - American Indian Philosophies [AH, DSJ] (4.0 cr)
- AMIN 5202 - American Indians and Photography [AH, DSJ] (3.0 cr)
- AMIN 5303 - American Indians and Photography [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)
  or GWSS 3412 - 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)
- 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)

Upper Division Writing Intensive within the 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:
- AMIN 3201W - American Indian Literature [LITR, DSJ, WI] (3.0 cr)
- AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)

Senior Project
Please note that 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:

- AMIN 4820W - Senior Seminar [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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 30 to 39
- Degree: Bachelor of Arts

If you have ever pondered, "Why am I here?" or "What is the meaning of life?" then you have already thought about philosophy. Philosophy poses questions about human endeavors and examines our basic assumptions about everything we think we know. It takes on challenging issues that sometimes defy resolution and trains the brain to think in a rigorous and analytic way about all the possible answers and what's at stake. Philosophy is not just a subject matter but a way of thinking.

In your philosophy courses, you will learn about the way that people throughout history have engaged in this kind of thinking with questions such as "Can I really trust my senses to tell me about reality?", "Is anything really morally right or wrong or is it all just relative?", "Do scientific theories tell us the truth about the world or are they tools that are useful for certain purposes?" and "Are some societies more just than others?". You will discover that thinking about these questions with an open mind is deeply satisfying. Philosophical thinking also contributes to a worthwhile life; in the words of Socrates "the unexamined life is not worth living".

Of course, life isn't all about having fun thinking. Philosophy is also much more practical than you might think! Because philosophy is so far-reaching, the method it uses for study enhances the study of other fields such as art, math, science, language, and law with tremendous success. It is a great complement to other majors as a second major or a minor. You can find details about good combinations on our website. Also, studying philosophy is a fantastic way to hone your critical thinking and analytic writing skills. You'll learn two types of critical thinking: First, a method for rigorous analysis of arguments. Second, a habit of asking penetrating questions about the hidden assumptions of any position, ideology or practice. You will develop your capacities to conceive of alternative assumptions, evaluate which ones are best and determine where they lead. You'll learn to write papers that clearly demonstrate these skills.

And finally, you can reassure your parents about your choice of philosophy with the fact that the skills of critical thinking and analytic writing are highly desirable and sought by graduate programs and employers. Evidence of this includes:

PHIL majors rank first among all majors in law school acceptance rate: 82.4%.
PHIL majors rank first among all majors in verbal and analytic sections of the GRE (and first among humanities majors in the quantitative section)
PHIL majors score higher on the Graduate Management Admissions Test (the test that most MBA programs require) than students in any business major (management, finance, accounting, marketing, etc.)
PHIL majors' salaries increase more over 10 years than most other majors, including marketing and accounting (The Wall Street Journal).
"The present value of the extra earnings that graduates in humanities majors can expect over their lifetime is $444,700 for English majors, $537,800 for history majors, and $658,900 for philosophy majors" (Forbes).

For more information, visit: http://www.philosophy.umn.edu/

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

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

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

Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 4 semester(s) or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

A philosophy major program requires 30 credits, at least 11 of which must be upper division philosophy credits completed at the University of Minnesota - Twin Cities campus. No more than 8 credits of PHIL 1xxx may count toward the degree, and at least two 3-or-more-credit courses must be PHIL 4xxx or higher. Students who double-major and choose to complete the senior project in their other major are still responsible for taking 30 total PHIL credits. 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.

Required 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 4605 - Space and Time (3.0 cr)
• PHIL 4607 - Philosophy of the Biological Sciences (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 4320W - Intensive Study of an Historical Moral Theory [WI] (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 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- PHIL 3304 - Law and Morality [WI] (4.0 cr)
- PHIL 3305 - Medical Ethics (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 1003W - Introduction to Ethics [CIV, WI] (4.0 cr)
- 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 4320W - Intensive Study of an Historical Moral Theory [WI] (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)
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)

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
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 [WI] (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)

Senior Project
A senior project is required and is typically a paper.
- PHIL 4995 - Senior Project (Directed Studies) (1.0 cr)
  or 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 3302W - Moral Problems of Contemporary Society [CIV, 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 4320W - Intensive Study of an Historical Moral Theory [WI] (3.0 cr)
- PHIL 4321W - Theories of Justice [WI] (3.0 cr)

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

Ethics and Civic Life
The Department of Philosophy's optional concentration in ethics and civic life is an opportunity for students who are interested in ethics and community service to relate their experiences in the classroom to their work in the community and vice versa. Students who complete the concentration will receive acknowledgment on their transcripts.

Core Courses
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 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- PHIL 3304 - Law and Morality [WI] (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)

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 2016
• 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
The minor consists of 14 semester credits (or their equivalent) of PHIL courses at the 3xxx-level or above. At least 8 credits 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)
or 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 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- PHIL 3304 - Law and Morality [WI] (4.0 cr)
- PHIL 3305 - Medical Ethics (4.0 cr)

Ethics and Moral Philosophy
In these courses you will explore questions such as: What it is 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 4320W - Intensive Study of an Historical Moral Theory [WI] (3.0 cr)
- PHIL 4340 - 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)
  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 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 makes a claim "scientific"? How do scientists know when they have a good explanatory theory? How can we make informed evaluations of scientific claims in order to participate knowledgeably in society and make the best choices in everyday life? Philosophy of science courses address these and other conceptual questions about the nature and consequences of scientific reasoning.
Take 0 or more course(s) from the following:
• PHIL 3304 - Law and Morality [WI] (4.0 cr)
• PHIL 4321W - Theories of Justice [WI] (3.0 cr)
• PHIL 4414 - Political Philosophy (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)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 56
- 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
Prior to declaring the major, it is strongly recommended that students complete at least one 2xxx level course required for the major.

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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

Mathematics
Complete a total of four courses from the calculus sequence or honors calculus sequence. These course do not count toward the total number of credits required for the major.

Calculus Sequence
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 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)

or Honors Sequence
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)
MATH 2574H - Honors Calculus IV (4.0 cr)

Major Courses
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)

Physics III
PHYS 2503 - Physics III: Intro to Waves, Optics, and Special Relativity (4.0 cr)
or PHYS 2503H - Honors Physics III (4.0 cr)

Other Lower-division Requirements
PHYS 2201 - Introductory Thermodynamics and Statistical Physics (3.0 cr)
PHYS 2601 - Quantum Physics (4.0 cr)
PHYS 2605 - Quantum Physics Laboratory (3.0 cr)
PHYS 4051 - Methods of Experimental Physics I (5.0 cr)

Upper-Division 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)

Senior Project
The senior project 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 senior project 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 - 1 course(s) from the following:
• PHYS 4052W - Methods of Experimental Physics II [WI] (5.0 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 2016
• Required credits in this minor: 37

See the major description for more information.

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

Minor Requirements
Physics minors must take all required physics and mathematics courses A-F (except those offered S-N only). Students may earn no more than one degree in the Department of Physics: a BA or a BS or a minor.

Mathematics
Take 12 credits.
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- MATH 1372 - CSE Calculus II (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- 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)

or Honors Sequence
- 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)

Physics Sequence
Take 25 credits.
- PHYS 2201 - Introductory Thermodynamics and Statistical Physics (3.0 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)
- 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)
- PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)
- PHYS 1502V - Honors Introduction to Electricity and Magnetism [PHYS, WI] (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 2605 - Quantum Physics Laboratory (3.0 cr)

Quantum Physics
- PHYS 2601 - Quantum Physics (4.0 cr)
- PHYS 2605 - Quantum Physics Laboratory (3.0 cr)

Physics/Astrophysics Elective
Take 3 or more credit(s) from the following:
- PHYS 3022 - Introduction to Cosmology (3.0 cr)
- PHYS 4001 - Analytical Mechanics (4.0 cr)
- PHYS 4002 - Electricity and Magnetism (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 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 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 5022 - Relativity, Cosmology, and the Universe (4.0 cr)
• PHYS 5041 - Mathematical Methods for Physics (4.0 cr)
• PHYS 5042 - Analytical and Numerical Methods of Physics II (4.0 cr)
• PHYS 5081 - 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 4002 - Astrophysics II (4.0 cr)
• AST 4001 - Astrophysics I (4.0 cr)
• AST 4031 - Interpretation and Analysis of Astrophysical Data (4.0 cr)
• AST 4101 - Computational Methods in the Physical Sciences (4.0 cr)
• AST 5001 - Galactic Astronomy (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)
**Twin Cities Campus**

**Physiology B.A.**

*Integrative Biology and Physiology*

**College of Liberal Arts**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 60 to 69
- Degree: Bachelor of Arts

The 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 physiology major website: http://physiology.med.umn.edu/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](http://www.umn.edu/admission).

**General Requirements**

All students are required to 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/liberal). Required courses for the major or minor in which a 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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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

**Preparatory Coursework**

Take 27-30 credits of prerequisites for future physiology coursework, such as PHSL 3061 and 3701.

**Quantitative Sequence**

Take 2 courses for a total of 7-8 credits.

- **MATH 1271** - Calculus I [MATH] (4.0 cr)
- **MATH 1272** - 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 (3.0 cr)
or BIOL 5272 - Applied Biostatistics (3.0 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 4 courses for a total of 8 credits.
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)

Physics Sequence
Take 2 courses for a total of 8-10 credits.
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)
Physics II
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)

General Biology
Take the following course for 4 credits.
BIOL 1009 - General Biology [BIOL] (4.0 cr)

Major Core Curriculum
Take a minimum of 10 courses for 27-33 credits.
Organic Chemistry
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2311 - Organic Lab (4.0 cr)

Organic Chemistry II
CHEM 2302 - Organic Chemistry II (3.0 cr)
or CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)

Physiology
PHSL 3061 - Principles of Physiology (4.0 cr)
PHSL 3062W - Research Paper for Physiology Majors [WI] (1.0 cr)
PHSL 3701 - Physiology Laboratory (2.0 cr)

Advanced Physiology Course(s)
Take 1 or more course(s) totaling 1 - 6 credit(s) from the following:
• PHSL 3095 - Problems in Physiology (1.0 - 5.0 cr)
• PHSL 4xxx
• PHSL 5xxx
• BIOC 5444 - Muscle (3.0 cr)

Biochemistry
BIOC 3021 - Biochemistry (3.0 cr)
or BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)

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

Cell Biology
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
A course taken as a major requirement cannot also count as an elective.
Take 3 or more course(s) totaling 6 or more credit(s) from the following:
• ANAT 3601 - Principles of Human Anatomy (3.0 cr)
• ANAT 3602 - Principles of Human Anatomy Laboratory (2.0 cr)
• ANAT 3608H - Principles of Human Anatomy Laboratory for Honors Students (3.0 cr)
• ANAT 3611 - Principles of Human Anatomy (3.0 cr)
• ANAT 3612 - Principles of Human Anatomy Laboratory (2.0 cr)
• ANAT 4900 - Directed Studies in Anatomy (1.0 - 6.0 cr)
• ANAT 5525 - Anatomy and Physiology of the Pelvis and Urinary System (1.0 - 2.0 cr)
• BIOC 4xxx
• BIOL 4993 - Directed Studies (1.0 - 6.0 cr)
• BIOL 4994 - Directed Research (1.0 - 6.0 cr)
• CHEM 4xxx
• CSCI 3xxx
• CSCI 4xxx
• GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
• GCD 4034 - Molecular Genetics (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 5012 - Learning and Cognition in Animals (4.0 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)
• BIOC 5444 - Muscle (3.0 cr)

**Intercultural Competency Electives**

These electives provide a broader perspective on health and society.

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 3458W - 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 1301W - Our Globalizing World [SOCS, GP, WI] (3.0 cr)
- GEOG 3411W - Geography of Health and Health Care [WI] (4.0 cr)
- GLOS 1015W - Globalization: Issues and Challenges [GP, WI] (4.0 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)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- GWSS 3003 - Gender and Global Politics [SOCS, GP] (3.0 cr)
- GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- POL 3464 - Politics of Inequality (3.0 cr)
- PSY 3301 - Introduction to Cultural Psychology (3.0 cr)
- SOC 4246 - Sociology of Health and Illness (3.0 cr)
- AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 cr)
  *or POL 1019* - Indigenous Peoples: A Global Perspective [GP] (3.0 cr)
- ANTH 3023 - Culture and Society of India [GP, SOCS] (3.0 cr)
  *or GLOS 3961* - Culture and Society of India [GP, SOCS] (3.0 cr)
- ALL 3676 - Culture and Society of India [GP, SOCS] (3.0 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)
- AAS 3211W - American Race Relations [DSJ, WI] (3.0 cr)
  *or SOC 3211W* - American Race Relations [DSJ, WI] (3.0 cr)
- GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  *or GEOG 3331* - Geography of the World Economy [SOCS, GP] (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)
•GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
•GLOS 3681W - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or RELS 3716 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (3.0 cr)
•GLOS 4221 - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
or SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
•AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
or CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
or ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)
or ANTH 1003V - Understanding Cultures: Honors [SOCS, GP, WI] (4.0 cr)
•CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, 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:
•PHSL 3062W - Research Paper for Physiology Majors [WI] (1.0 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
Political Science B.A.
Political Science Department
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 32
• 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.

The political science BA consists of a minimum of 32 credits, at least 24 of which must be upper division (POL 3xxx-4xxx). Choosing a sub-plan concentration is optional.

Students may earn a BA or a minor in political science, but not both.

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

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require that students complete 48 credits of upper division coursework taken at the 3xxx,4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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 B.A.

Take 0 - 8 credit(s) from the following:
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) including 3 or more sub-requirements(s) from the following:

**Political Theory**

Take 0 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 3235W** - Democracy and Citizenship [CIV, WI] (3.0 cr)
- **POL 3237** - Practicum: Democracy and Citizenship (1.0 cr)
- **POL 3251W** - Power, Virtue, and Vice: Ancient and Early Modern Political Theory [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)

**Comparative Government**

Take 0 or more course(s) from the following:

- **POL 3410** - Topics in Comparative Politics (3.0 cr)
- **POL 3431** - Politics of India [GP] (4.0 cr)
- **POL 3431W** - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- **POL 3464** - Politics of Inequality (3.0 cr)
- **POL 3479** - Latin American Politics [GP] (3.0 cr)
- **POL 3481H** - Governments and Markets (4.0 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 4410** - Topics in Comparative Politics (3.0 cr)
- **POL 4461W** - European Government and Politics [GP, WI] (4.0 cr)
- **POL 4463** - The Cuban Revolution Through the Words of Cuban Revolutionaries [GP] (3.0 cr)
- **POL 4465** - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
- **POL 4473W** - Chinese Politics [GP, WI] (3.0 cr)
- **POL 4477** - Struggles and Issues in the Middle East (4.0 cr)
- **POL 4478W** - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (4.0 cr)
- **POL 4481** - Governments and Markets (3.0 - 4.0 cr)
- **POL 4485** - Human Rights Policy: Issues and Actors [CIV] (3.0 cr)
- **POL 4487** - The Struggle for Democratization and Citizenship (4.0 cr)
- **POL 4482** - Law and (In)Justice in Latin America (3.0 cr)
- **POL 4494W** - US-Latin American Relations [WI] (3.0 cr)
- **POL 4495** - Politics of Family, Sex, and Children [DSJ] (3.0 cr)
- **POL 4497** - Patronage & Corruption [GP] (3.0 cr)

**International Relations**

Take 0 or more course(s) from the following:

- **POL 3810** - Topics in International Relations and Foreign Policy (3.0 cr)
- **POL 3833** - The United States and the Global Economy (3.0 cr)
- **POL 3835** - International Relations [SOCS, GP] (3.0 cr)
• POL 3873W - Global Citizenship and International Ethics [CIV, WI] (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 4885W - International Conflict and Security [GP, WI] (4.0 cr)
• POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)

• American Government
Take 0 or more course(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 - 4.0 cr)
• POL 3325 - U.S. Campaigns and Elections (3.0 cr)
• POL 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
• POL 3365 - Government and Medicine (3.0 cr)
• POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (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 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
• POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)
or POL 3785H - Persuasion and Political Propaganda (3.0 cr)
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)
or CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)
or POL 3785H - Persuasion and Political Propaganda (3.0 cr)
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)
or POL 3785H - Persuasion and Political Propaganda (3.0 cr)
• POL 3792 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• POL 3792 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• POL 4310 - Topics in American Politics (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
• POL 4317 - Becoming Stupid: Anti-Science in American Politics (3.0 cr)
• POL 4322 - Rethinking the Welfare State (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 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 4775 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
• POL 4775 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
or AMIN 4501 - Law, Sovereignty, and Treaty Rights (3.0 cr)
or AMIN 4525W - Federal Indian Policy [WI] (3.0 cr)
• Take at most 6 credit(s) from the following:
  • POL 3065 - Political Engagement Careers: Planning and Preparing For Your Future [CIV] (3.0 cr)
  • POL 3070 - Distinguished Undergraduate Research Internship (2.0 cr)
  • POL 3108H - Honors Tutorial: Thesis Preparation and Political Science Inquiry (3.0 cr)
  • POL 3110H - Honors Thesis Credits (1.0 - 4.0 cr)
  • POL 4010 - Topics in Methods (4.0 cr)
  • POL 4900V - Honors: Senior Paper (1.0 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)
• Take at most 6 credit(s) from the following:
  • POL 3080 - Faculty-Supervised Individual Internships (3.0 - 13.0 cr)

Senior Project
The senior project is fulfilled by taking any POL 4xxx course as part of the 24-credit upper-division requirement. Honors students must take POL 4900V or POL 3110H to complete the senior thesis requirement, also a part of the 24-credit upper-division 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:

- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
- POL 3251W - Power, Virtue, and Vice: Ancient and Early Modern Political Theory [WI] (3.0 cr)
- POL 3252W - Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)
- POL 3451W - Politics and Society in the New Europe [GP, WI] (3.0 cr)
- POL 3489W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
- POL 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] (4.0 cr)
- POL 4494W - US-Latin American Relations [WI] (3.0 cr)
- POL 3873W - Global Citizenship and International Ethics [CIV, WI] (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 4885W - International Conflict and Security [GP, WI] (4.0 cr)
- POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 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 4900V - Honors: Senior Paper (1.0 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 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
- POL 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 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)
- POL 4481 - Governments and Markets (3.0 - 4.0 cr)
- POL 3833 - The United States and the Global Economy (3.0 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)
- POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
- POL 4737W - American Political Parties [WI] (4.0 cr)
- POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)

Citizenship and Civic Action

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 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 3799 - Politics of Race, Class, and Ethnicity (3.0 cr)
- POL 3873W - Global Citizenship and International Ethics [CIV, WI] (3.0 cr)
- POL 3875W - 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 4322</td>
<td>Rethinking the Welfare State (3.0 cr)</td>
</tr>
<tr>
<td>POL 4485</td>
<td>Human Rights Policy: Issues and Actors [CIV] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4487</td>
<td>The Struggle for Democratization and Citizenship (4.0 cr)</td>
</tr>
<tr>
<td>POL 4502W</td>
<td>The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4766</td>
<td>America, the Unusual?: American Political Culture in Comparative Context [CIV] (3.0 cr)</td>
</tr>
</tbody>
</table>

**Democratization and Development**

Democratization and Development

Take 4 or more course(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3210</td>
<td>Topics in Political Theory (3.0 cr)</td>
</tr>
<tr>
<td>POL 3235W</td>
<td>Democracy and Citizenship [CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 3477</td>
<td>Political Economy of Development [SOCS, GP] (3.0 - 4.0 cr)</td>
</tr>
<tr>
<td>POL 3739</td>
<td>Politics of Race, Class, and Ethnicity (3.0 cr)</td>
</tr>
<tr>
<td>POL 4210</td>
<td>Topics in Political Theory (3.0 cr)</td>
</tr>
<tr>
<td>POL 4253</td>
<td>Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)</td>
</tr>
<tr>
<td>POL 4275</td>
<td>Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)</td>
</tr>
<tr>
<td>POL 4322</td>
<td>Rethinking the Welfare State (3.0 cr)</td>
</tr>
<tr>
<td>POL 4477</td>
<td>Struggles and Issues in the Middle East (4.0 cr)</td>
</tr>
<tr>
<td>POL 4478W</td>
<td>Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (4.0 cr)</td>
</tr>
<tr>
<td>POL 3479</td>
<td>Latin American Politics [GP] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4487</td>
<td>The Struggle for Democratization and Citizenship (4.0 cr)</td>
</tr>
<tr>
<td>POL 4766</td>
<td>America, the Unusual?: American Political Culture in Comparative Context [CIV] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4885W</td>
<td>International Conflict and Security [GP, WI] (4.0 cr)</td>
</tr>
</tbody>
</table>

**Global Politics**

Global Politics

Take 4 or more course(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3235W</td>
<td>Democracy and Citizenship [CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 3451W</td>
<td>Politics and Society in the New Europe [GP, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 3477</td>
<td>Political Economy of Development [SOCS, GP] (3.0 - 4.0 cr)</td>
</tr>
<tr>
<td>POL 3835</td>
<td>International Relations [SOCS, GP] (3.0 cr)</td>
</tr>
<tr>
<td>POL 3873W</td>
<td>Global Citizenship and International Ethics [CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4461W</td>
<td>European Government and Politics [GP, WI] (4.0 cr)</td>
</tr>
<tr>
<td>POL 4473W</td>
<td>Chinese Politics [GP, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4477</td>
<td>Struggles and Issues in the Middle East (4.0 cr)</td>
</tr>
<tr>
<td>POL 4478W</td>
<td>Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (4.0 cr)</td>
</tr>
<tr>
<td>POL 3479</td>
<td>Latin American Politics [GP] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4485</td>
<td>Human Rights Policy: Issues and Actors [CIV] (3.0 cr)</td>
</tr>
<tr>
<td>POL 3833</td>
<td>The United States and the Global Economy (3.0 cr)</td>
</tr>
<tr>
<td>POL 4883W</td>
<td>Global Governance [WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4885W</td>
<td>International Conflict and Security [GP, WI] (4.0 cr)</td>
</tr>
<tr>
<td>POL 4887</td>
<td>Thinking Strategically in International Politics [MATH] (3.0 cr)</td>
</tr>
</tbody>
</table>

**Law and Politics**

Law and Politics

Take 4 or more course(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3225</td>
<td>American Political Thought [CIV] (3.0 cr)</td>
</tr>
<tr>
<td>POL 3252W</td>
<td>Revolution, Democracy, and Empire: Modern Political Thought [AH, CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4253</td>
<td>Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)</td>
</tr>
<tr>
<td>POL 4275</td>
<td>Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)</td>
</tr>
<tr>
<td>POL 4501W</td>
<td>The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4502W</td>
<td>The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4883W</td>
<td>Global Governance [WI] (3.0 cr)</td>
</tr>
</tbody>
</table>

**Political Psychology, Beliefs, and Behavior**

Political Psychology, Beliefs, and Behavior

Take 4 or more course(s) from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3085</td>
<td>Quantitative Analysis in Political Science [MATH] (4.0 cr)</td>
</tr>
<tr>
<td>POL 3739</td>
<td>Politics of Race, Class, and Ethnicity (3.0 cr)</td>
</tr>
<tr>
<td>POL 3766</td>
<td>Political Psychology of Mass Behavior [SOCS] (3.0 cr)</td>
</tr>
<tr>
<td>POL 4253</td>
<td>Modernity and Its Discontents: Late Modern Political Thought (3.0 - 4.0 cr)</td>
</tr>
<tr>
<td>POL 4275</td>
<td>Domination, Exclusion, and Justice: Contemporary Political Thought (3.0 cr)</td>
</tr>
<tr>
<td>POL 4485</td>
<td>Human Rights Policy: Issues and Actors [CIV] (3.0 cr)</td>
</tr>
</tbody>
</table>
• 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

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 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
• POL 4322 - Rethinking the Welfare State (3.0 cr)
• POL 4327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
• POL 4481 - Governments and Markets (3.0 - 4.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 3833 - The United States and the Global Economy (3.0 cr)

BA/MPP in Political Engagement

The College of Liberal Arts and the Humphrey School of Public Affairs offer an early-admission opportunity for eligible University of Minnesota Political Science BA students also interested in completing the master's in public policy (M.P.P.). The M.P.P.’s political engagement sub-plan enables political science majors to take 13 M.P.P. credits during their senior (fourth) year, and to complete the M.P.P. after a fifth year of full-time graduate study plus one summer.

Interested political science undergraduates should contact the Department of Political Science advisor for more information. The M.P.P./political engagement sub-plan application deadline is December 15th of the student's junior year, and admission to the M.P.P./political engagement sub-plan is contingent on a formal admissions process.

Students admitted to the M.P.P./political engagement sub-plan must maintain timely degree progress to ensure all undergraduate degree requirements are completed by the end of their fourth year.

The M.P.P.’s political engagement sub-plan is open to political science undergraduates only. Double majors may apply, but only if they choose to complete the senior project requirement in Political Science.

BA/MPP in Political Engagement

PA 5002 - Introduction to Policy Analysis (1.5 cr)
PA 5003 - Introduction to Financial Analysis and Management (1.5 cr)
PA 5011 - Management of Organizations (3.0 cr)
PA 5021 - Economics For Policy Analysis and Planning I (3.0 cr)
PA 5031 - Empirical Analysis I (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 2016
- 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

Complete a minimum of four courses and 16 credits. POL 3070 & POL 4970 do not count toward the minor. Up to 3 credits of POL 3080 may count toward the minor.

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 or more credit(s) from the following:
- 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 1025 - Global Politics [SOCS, GP] (4.0 cr)
- POL 1054 - Puzzles in World Politics [SOCS, GP] (4.0 cr)
- POL 1054H - Honors: Puzzles in World Politics [SOCS, GP] (4.0 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 1903 - Freshman Seminar (3.0 cr)
- POL 1905 - Freshman Seminar (3.0 cr)
- POL 1942 - Topics: Freshman Seminar [TS] (3.0 cr)
- POL 1019 - Indigenous Peoples: A Global Perspective [GP] (3.0 cr)
  or AMIN 1002 - Indigenous Peoples in Global Perspective [GP] (3.0 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 3237 - Practicum: Democracy and Citizenship (1.0 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)

**Comparative Government**

Take 0 or more credit(s) from the following:
• POL 3410 - Topics in Comparative Politics (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 3474 - Russian Politics: From Soviet to Post-Soviet Regimes (3.0 cr)
• POL 3475 - Islamist Politics (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 - 4.0 cr)
• POL 3479 - Latin American Politics [GP] (3.0 cr)
• POL 3481H - Governments and Markets (4.0 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 4410 - Topics in Comparative Politics (3.0 cr)
• POL 4461W - European Government and Politics [GP, WI] (4.0 cr)
• POL 4463 - The Cuban Revolution Through the Words of Cuban Revolutionaries [GP] (3.0 cr)
• POL 4465 - Democracy and Dictatorship in Southeast Asia [GP] (3.0 cr)
• POL 4473W - Chinese Politics [GP, WI] (3.0 cr)
• POL 4477 - Struggles and Issues in the Middle East (4.0 cr)
• POL 4478W - Contemporary Politics in Africa and the Colonial Legacy [GP, WI] (4.0 cr)
• POL 4481H - Governments and Markets (3.0 - 4.0 cr)
• POL 4485 - Human Rights Policy: Issues and Actors [CIV] (3.0 cr)
• POL 4487 - The Struggle for Democratization and Citizenship (4.0 cr)
• POL 4492 - Law and (In)Justice in Latin America (3.0 cr)
• POL 4494W - US-Latin American Relations [WI] (3.0 cr)
• POL 4495 - Politics of Family, Sex, and Children [DSJ] (3.0 cr)
• POL 4497 - Patronage & Corruption [GP] (3.0 cr)
• POL 3431 - Politics of India [GP] (4.0 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 - 4.0 cr)
• POL 3325 - U.S. Campaigns and Elections (3.0 cr)
• POL 3327 - Suburbs, Stadiums, and Scandals: The Politics of American Cities (3.0 cr)
• POL 3365 - Government and Medicine (3.0 cr)
• POL 3701 - American Indian Tribal Governments and Politics [HIS, DSJ] (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 3767 - Political Psychology of Elite Behavior [CIV] (3.0 cr)
• POL 3769 - Public Opinion and Voting Behavior [SOCS] (3.0 cr)
• POL 3785 - Persuasion and Political Propaganda (3.0 cr)
• POL 3785H - Persuasion and Political Propaganda (3.0 cr)
• POL 4310 - Topics in American Politics (3.0 cr)
• POL 4315W - State Governments: Laboratories of Democracy [WI] (4.0 cr)
• POL 4317 - Becoming Stupid: Anti-Science in American Politics (3.0 cr)
• POL 4322 - Rethinking the Welfare State (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 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 3752 - Chicana/o Politics [SOCS, DSJ] (3.0 cr)
  or CHIC 3852 - Chicana/o Politics [SOCS, DSJ] (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)

**International Relations**

Take 0 or more credit(s) from the following:

- POL 3810 - Topics in International Relations and Foreign Policy (3.0 cr)
- POL 3833 - The United States and the Global Economy (3.0 cr)
- POL 3835 - International Relations [SOCS, GP] (3.0 cr)
- POL 3873W - Global Citizenship and International Ethics [CIV, WI] (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 4885W - International Conflict and Security [GP, WI] (4.0 cr)
- POL 4887 - Thinking Strategically in International Politics [MATH] (3.0 cr)

**Electives**

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 3080 - Faculty-Supervised Individual Internships (3.0 - 13.0 cr)
- POL 4010 - Topics in Methods (4.0 cr)
- POL 5xxx
- 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)
Twin Cities Campus

Portuguese Studies Minor

Spanish & Portuguese Studies

College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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 take 4 semester(s) of Portuguese.

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)
    - 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 the following course for 4 credits.

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)
Psychology B.A.

Program Type: Baccalaureate
Requirements for this program are current for Fall 2016
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).

Students may declare the major with PSY 1001 (or equivalent) completed and PSY 3801 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
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 degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. This program requires 18 upper division credits outside the major. Students may not use CPSY, EPSY, CAPY or PSY courses to satisfy this requirement. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Transfer students must complete a minimum of 16 upper division credits in the Department of Psychology at the University of Minnesota - Twin Cities campus.

Students may earn no more than one undergraduate degree in psychology: a BA or a BS or a minor. Students may combine the psychology BA with the child psychology minor, but not with the child psychology BA or BS.

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

Major Courses
Take 36 or more total credits including: Foundation Courses, Distribution Area Courses, Senior Project and any Electives needed to
reach the minimum 36 credits in Psychology coursework. 3 Foundation Courses, 5 Distribution Area Courses, and Senior Project are all required.

### Foundation Courses
Take 3 of the following courses.
- **PSY 1001** - Introduction to Psychology [SOCS] (4.0 cr)
  - or **PSY 1001H** - Honors Introduction to Psychology [SOCS] (4.0 cr)
- **PSY 3801** - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
  - or **PSY 3801H** - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
- **PSY 3001W** - Introduction to Research Methods [WI] (4.0 cr)
  - or **PSY 3001V** - Honors Introduction to Research Methods [WI] (4.0 cr)

### Distribution Area Courses
Students are required to take at least five courses from the Distribution Area Courses. Students should take additional Psychology courses from the Distribution Areas lists or the list of "Additional Elective Options" to reach the 36 credit minimum for the major.

#### 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 4011** - Applied Behavior Analysis (3.0 cr)
- **PSY 4012** - Behavior Analysis and Autism (4.0 cr)
- **PSY 4032** - Psychology of Music (3.0 cr)
- **PSY 5012** - Learning and Cognition in Animals (4.0 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)

#### Distribution Area B: Clinical, Personality, and Social
Take 2 or more course(s) from the following:
- **CPSY 3301** - Introduction to Child Psychology for Social Sciences (4.0 cr)
- **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)
  - or **PSY 5101** - Personality Psychology (3.0 cr)
- **PSY 4207** - Personality and Social Behavior (3.0 cr)
  - or **PSY 5207** - Personality and Social Behavior (3.0 cr)

#### Distribution Area C: Individual Differences, Quantitative, and Applied
Take 1 or more course(s) from the following:
- **PSY 3121** - History and Systems of Psychology (3.0 cr)
- **PSY 3511** - Introduction to Counseling Psychology (3.0 cr)
- **PSY 3711** - Psychology in the Workplace (3.0 cr)
- **PSY 4501** - Psychology of Women and Gender (3.0 cr)
- **PSY 5136** - Human Abilities (3.0 cr)
- **PSY 5137** - Introduction to Behavioral Genetics (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 4520 - Psychology of Stress and Trauma (3.0 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 3993 - Directed Study (1.0 - 6.0 cr)
• PSY 3996 - Undergraduate Fieldwork and Internship in Psychology (1.0 - 6.0 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)

Senior Project
Students completing a double major in another CLA department who choose to complete that department's major project must complete 36 total credits in psychology, using additional electives to replace credits that would have been earned through psychology's major project.

General Sequence
Take 1 or more course(s) totaling 3 or more 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
Honors students must take PSY 4994V prior to taking PSY 4902V. 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.
To complete the Honors Senior Project, take the following 2 courses for 7-10 credits:
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 - Introduction to Research Methods [WI] (4.0 cr)
• PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
• PSY 3901W - Major Project - Research Laboratory [WI] (3.0 cr)
• PSY 3902W - Major Project - Individual Interests [WI] (3.0 cr)
• PSY 3903W - Major Project - Community Engagement [WI] (3.0 cr)
• PSY 4902V - Honors Project [WI] (1.0 - 6.0 cr)
• PSY 5031W - Perception [WI] (3.0 cr)
• PSY 5036W - Computational Vision [WI] (3.0 cr)
• PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
Twin Cities Campus
Psychology B.S.
Psychology
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• 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 cluster courses prior to formally declaring the major. To declare a major, students first complete the Online Declaration Module (http://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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

Transfer students must complete a minimum of 16 upper division psychology credits in the Department of Psychology at the University of Minnesota - Twin Cities campus; 9 credits within the Outside Foundation Courses requirement must be completed 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.

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)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)
- CHEM 2311 - Organic Lab (4.0 cr)
- CHEM 2312H - Honors Organic Lab (5.0 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 1081 - Chemistry for the Life Sciences I (3.0 cr)
  or CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
  or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
  with CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
- CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
  or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
  with CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
- 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)

**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)
- ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOL 1101 - Genetics and Society [CIV] (3.0 cr)
- BIOL 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
- EEB 3409 - Evolution (3.0 cr)
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
- EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
• NSCI 2100 - Human Neuroanatomy [BIOL] (4.0 cr)
• NSCI 3100 - Mind and Brain (3.0 cr)
• NSCI 3101 - Introduction to Neurobiology I: Molecular, Cellular, 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)
• 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 4003 - Genetics (3.0 cr)
  or GCD 3022 - Genetics (3.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
  or GCD 3033 - Principles of Cell Biology (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)

Major Courses
Take 36 or more total credits including: Foundation Courses, Distribution Area Courses, Senior Project and any Electives needed to reach the minimum 36 credits in Psychology coursework. 3 Foundation Courses, 5 Distribution Area Courses, and Senior Project are all required.

Foundation Courses
Take 3 of the following courses.
• PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
  or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
• PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
  or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
  or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

Distribution Area Courses
Students are required to take at least five courses from the Distribution Area Courses. 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 4011 - Applied Behavior Analysis (3.0 cr)
• PSY 4012 - Behavior Analysis and Autism (4.0 cr)
• PSY 4032 - Psychology of Music (3.0 cr)
• PSY 4036 - Perceptual Issues in Visual Impairment (3.0 cr)
• PSY 5012 - Learning and Cognition in Animals (4.0 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)

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)
  or PSY 5101 - Personality Psychology (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 for Social Sciences (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 5136 - Human Abilities (3.0 cr)
• PSY 5137 - Introduction to Behavioral Genetics (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 4520 - Psychology of Stress and Trauma (3.0 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 3993 - Directed Study (1.0 - 6.0 cr)
• PSY 3996 - Undergraduate Fieldwork and Internship in Psychology (1.0 - 6.0 cr)
• PSY 4960 - Seminar in Psychology (1.0 - 4.0 cr)
• PSY 4993H - Honors Internship/Externship (1.0 - 6.0 cr)
• PSY 5960 - Topics in Psychology (1.0 - 4.0 cr)

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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)

Senior Project
General Sequence
Take PSY 4993 or 5993 one semester prior to, or concurrent with PSY 3901W or 3902W.
Take 2 courses for at least 6 credits:
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
Honors students must take PSY 4994V prior to taking PSY 4902V. PSY 4994V is typically taken in the Spring semester of Junior year. Students should plan this sequence with Psychology Honors faculty. Students must enroll in PSY 4902V for a minimum of 3, but no more than 6 credits.
To complete the Honors Senior Project, take the following 2 courses for 7-10 credits:
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 4902V - Honors Project [WI] (1.0 - 6.0 cr)
- PSY 5031W - Perception [WI] (3.0 cr)
- PSY 5036W - Computational Vision [WI] (3.0 cr)
- PSY 5038W - Introduction to Neural Networks [WI] (3.0 cr)
Twin Cities Campus

Psychology Minor

Psychology
College of Liberal Arts

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2016
• 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. Students may declare the minor with PSY 1001 (or equivalent) completed and PSY 3801 (or a Department of Psychology approved equivalent) in progress.

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. Transfer students must complete a minimum of 9 upper division credits in the Department of Psychology at the University of Minnesota-Twin Cities campus in order to be awarded the minor. 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.

Required Foundation Courses
Take the following 3 courses:
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
or PSY 1001H - Honors Introduction to Psychology [SOCS] (4.0 cr)
PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
or PSY 3801H - Honors Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)
PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
or PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)

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 3xxx course followed by advanced coursework in that sub-area of the discipline.
Take 3 or more 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 4011 - Applied Behavior Analysis (3.0 cr)
• PSY 4012 - Behavior Analysis and Autism (4.0 cr)
• PSY 4032 - Psychology of Music (3.0 cr)
• PSY 4036 - Perceptual Issues in Visual Impairment (3.0 cr)
• PSY 5012 - Learning and Cognition in Animals (4.0 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)

• Distribution Area B: Clinical, Personality, and Social
  Take 0 or more course(s) from the following:
  • CPSY 3301 - Introduction to Child Psychology for Social Sciences (4.0 cr)
  • 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)
  or PSY 5101 - Personality 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 5136 - Human Abilities (3.0 cr)
  • PSY 5137 - Introduction to Behavioral Genetics (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 4520 - Psychology of Stress and Trauma (3.0 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:
  • PSY 3960 - Undergraduate Seminar in Psychology (1.0 - 5.0 cr)
  • PSY 3993 - Directed Study (1.0 - 6.0 cr)
  • PSY 3996 - Undergraduate Fieldwork and Internship in Psychology (1.0 - 6.0 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)
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 2016
• 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
Specific program requirements are subject to change. Minors must follow the degree requirements current for the semester in which they declared. All credits must be selected from the list of approved courses. Transfer coursework from outside the UMNTC must be reviewed and approved by the Public Health Advisory Board.

Introduction to the Discipline
Take a minimum of two courses (4-6 credits). Note: PUBH 3004 is a 4-credit course that combines PUBH 3001 and PUBH 3003. If taking PUBH 3004, do not take PUBH 3001 or PUBH 3003. (PUBH 3004 satisfies half of the "Introduction to the Discipline" sub-requirement and all of the "Applying Public Health Theory" sub-requirement below.)

Part I
PUBH 3202 - What is Public Health? (2.0 cr)
or PUBH 3001 - Personal and Community Health (2.0 cr)
or PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)

Part II
PUBH 3350 - Epidemiology: People, Places, and Disease (2.0 cr)
or PUBH 3106 - Making Sense of Health Studies (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)
- CSCL 3458W - The Body and the Politics of Representation [His, WI] (3.0 cr)
- CNES 3953 - Death and the Afterlife in the Ancient World [AH] (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] (4.0 cr)
- GWSS 3203W - Blood, Bodies and Science [TS, SOCS, WI] (3.0 cr)
- JOUR 5541 - Mass Communication and Public Health (3.0 cr)
- JOUR 5543 - Public Health Campaign Evaluation (3.0 cr)
- PHIL 3305 - Medical Ethics (4.0 cr)
- PSY 3206 - Introduction to Health Psychology (3.0 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)
- ECON 5890 - Economics of the Health-Care System (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] (4.0 cr)
- GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 cr)
- GLOS 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
- GLOS 3613V - Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
or SOC 3613W - Stuffed and Starved: The Politics of Eating [SOCS, GP, WI] (3.0 cr)
SOC 3511 - World Population Problems [GP] (3.0 cr)
or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
• GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or GWSS 3681 - Gender and the Family in the Islamic World (3.0 cr)
or SOC 3681 - Gender and the Family in the Islamic World (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)
• CSCL 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)
or GLBT 3456W - Sexuality and Culture [DSJ, WI] (3.0 cr)

Applying Public Health Theory

Note: Students who take PUBH 3004 in fulfillment of the "Introduction to the Discipline" sub-requirement will also have fulfilled the "Applying Public Health Theory" sub-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 3315 - Clinical Research from Lab to Bedside to Populations (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 3802 - Health and Human Rights (3.0 cr)
• PUBH 3807 - Global Health, Relief, Development and Religious and Non-religious NGOs (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

Note: Both Global Impact courses carry a pre-requisite chosen from the "Introduction to the Discipline" course list above. Take PUBH 3107 or PUBH 3601.
• PUBH 3107 - Global Public Health and the Environment (2.0 cr)
• 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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 31 to 34
• 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 concentration area must be approved by the major adviser.

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 Track I: Any language. Track II: Any language approved by the major adviser.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

A minimum of 12 upper division program credits must be taken at the University of Minnesota - Twin Cities campus. Students who double major and choose to complete the senior project requirement in their other CLA major are still required to take at least 30 credits in the religious studies program. 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 or Biblical studies: (1) the Major Breadth Course requirement should be fulfilled using courses on traditions fully distinct from the focal tradition in the sub-plan and well outside of the scope 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 1 or more course(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 in America [AH] (3.0 cr)
• CNES 1001 - World of the Bible: Religions, Empires, and Discourses of Power [AH] (3.0 cr)
  or RELS 1003 - World of the Bible: Religions, Empires, and Discourses of Power [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 Methods
RELS 3001W - Theory and Method in Religion: Critical Approaches to the Study of Religion [WI] (3.0 cr)

Senior Project
The senior project must be taken for 4 credits. Choose to enroll in RELS 4952 for 4 credits, or enroll in RELS 4952 concurrent with an adviser-approved upper-division course for a combined 4 credits. The program strongly recommends that students complete RELS 3001W at least one semester prior to enrolling in RELS 4952.
RELS 4952 - Final Project (1.0 - 4.0 cr)
  or RELS 4952 - Final Project (1.0 - 4.0 cr)
  with adviser-approved upper-division course

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)

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 or social sciences, or in theological or seminary programs.

Take a minimum of 24 credits at 3xxx or above. Final clearance by the major adviser is required.

Major Courses
Take a minimum of 4 courses and 12 credits. Courses must be approved by the major adviser, and may be taken in any relevant academic department.
• Take a course in a religious tradition (e.g., Buddhism, Christianity, Hinduism, Islam, Judaism, a Native American tradition, Zoroastrianism) for at least 3 credits.
• Take a course in a different religious tradition (e.g., Buddhism, Christianity, Hinduism, Islam, Judaism, a Native American tradition, Zoroastrianism) for at least 3 credits.
• Take two courses in sociocultural contexts of religion (e.g., in history, sociology, or anthropology of religion) for at least 3 credits each.

Area Concentration
Take a minimum of 4 courses and 12 credits in a chosen area concentration. These courses should share geographic, chronological, thematic, methodological, or traditional links. Courses used to fulfill the "Major Courses" sub-requirement cannot also be used to fulfill this requirement. Courses must be approved by the major adviser, and may be taken in any relevant department.
• Take four 3xxx-5xxx electives

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 interested in topics, such as the 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.

Take a minimum of 21 credits of which at least 18 credits must be 3xxx or above. This track requires that students gain proficiency in a language directly tied to their specified religion. Students must complete preparatory work through the fourth semester (or equivalent) of a language appropriate to the specific religious tradition and its sources. Language selection must be approved by the major adviser. Sample pairings include, but are not limited to, the following:

- American Indian religions: Ojibwe or Dakota
- Buddhism: Chinese or Japanese
- Christianity: Greek or Latin (for scriptural or medieval concentration), German or Spanish (for relevant geographical/cultural themes)
- Hinduism: Sanskrit or Hindi
- Islam: Arabic
- Judaism: Hebrew (for scriptural or historical area of concentration), German or Yiddish (e.g., for Jewish literature or 20th-century)

Interdisciplinary concentration areas and courses must be approved by the major advisor.

**Track II Language Proficiency Requirement**

Take a minimum of 3 credits. Students must gain proficiency (up through 4th semester or equiv) in a language directly tied to their specified religion. See above for further specification.

**Major Courses**

Take a minimum of 2 courses and 6 credits. Courses must be approved by major adviser, and may be taken in any relevant department.

- Take a course in a religious tradition different from the specified religion (e.g., Buddhism, Christianity, Hinduism, Islam, Judaism, a Native American tradition, Zoroastrianism) for at least 3 credits.
- Take a course in another religious tradition also different from the specified religion (e.g., Buddhism, Christianity, Hinduism, Islam, Judaism, a Native American tradition, Zoroastrianism) for at least 3 credits.

**Area Concentration**

Take a minimum of 4 courses and 12 credits. These courses should share a focus on the selected tradition. Courses used to fulfill the "Major Courses" sub-requirement cannot also be used to fulfill this requirement. Courses must be approved by the major adviser, and may be taken in any relevant department.

- Take four 3xxx-5xxx electives
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 2016
• 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
All minor coursework must be taken A-F. Transfer students must take at least three of the five courses at the University of Minnesota - Twin Cities campus (or with U of M residence credits for study abroad). Final clearance is required prior to graduation. Students may earn a BA or a minor in religious studies, but not both.

Theory and Methods
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 Equivalent course to RELS 3001 that is approved by the director of undergraduate studies.

Minor Electives
The purpose of the minor is to expose students to a diversity of religious traditions. At least two traditions must be represented among the four electives courses.
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:
- RELS 3076 - The Apostle Paul: Life, Letters, and Legacy (3.0 cr)
- RELS 3203 - The Bible: Wisdom, Poetry, and Apocalyptic (3.0 cr)
- JWST 3900 - Topics: Jewish Studies (3.0 cr)
- RELS 3073 - Roman Religion and Early Christianity (3.0 cr)
- MEST 3610 - Topics in Medieval Studies (3.0 - 4.0 cr)
- CNES 3105 - Ancient Rome: The Age of Augustus (3.0 cr)
- RELS 3970 - Supplemental Discussion in Religious Studies (1.0 cr)
- RELS 3993 - Directed Studies (1.0 - 4.0 cr)
- RELS 4952 - Final Project (1.0 - 4.0 cr)
- RELS 5001 - Theory and Method in the Study of Religion: Critical Approaches to the Study of Religion (3.0 cr)
- RELS 5504 - Development of Israelite Religion II (3.0 cr)
- HIST 5614 - The Medieval Church (3.0 cr)
- RELS 5721 - North Africa since 1500: Islam, Colonialism, and Independence (3.0 cr)
- RELS 5993 - Directed Studies (1.0 - 4.0 cr)
- RELS 8190 - Comparative Seminar in Religions in Antiquity (3.0 cr)
- RELS 3070 - Topics in Religious Studies (4.0 cr)
  or RELS 5070 - Topics in Religious Studies (3.0 cr)
- RELS 3072 - The New Testament (3.0 cr)
  or RELS 5072 - The New Testament (3.0 cr)
  or CNES 3072 - The New Testament (3.0 cr)
  or CNES 5072 - The New Testament (3.0 cr)
- RELS 3073 - Roman Religion and Early Christianity (3.0 cr)
  or CNES 3073 - Roman Religion and Early Christianity (3.0 cr)
- RELS 3078 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
  or HIST 3778 - Jews of the Islamic Mediterranean and Christian Europe, 7th-17th Centuries (3.0 cr)
- RELS 3079 - Muslims and Jews: Conflict and Coexistence 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 3113 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (3.0 cr)
  or HIST 3612 - History of Modern Israel/Palestine: Society, Culture, and Politics [GP] (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 3707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or ANTH 3021W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
or RELS 5707W - Anthropology of the Middle East [SOCS, GP, WI] (3.0 cr)
• RELS 3708 - The Cultures of the Silk Road (3.0 cr)
or 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 3506 - Modern Iran: Nationalism, Religion, and the Struggle to Create Modern Iran (3.0 cr)
• RELS 3711 - The Islamic World [SOCS, GP] (3.0 cr)
or GEOG 3145 - The Islamic World [SOCS, GP] (3.0 cr)
or GLOS 3645 - Islamic World [SOCS, GP] (3.0 cr)
• RELS 3712 - Islam: Religion and Culture (3.0 cr)
or HIST 3493 - Islam: Religion and Culture (3.0 cr)
or 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)
• RELS 3717 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
or HIST 3606 - Christians, Muslims, and Jews in the Middle Ages [HIS, GP] (3.0 cr)
• RELS 3718W - Christ in Islamic Thought [WI] (3.0 cr)
or HIST 3494W - Christ in Islamic Thought [WI] (3.0 cr)
• RELS 3719 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
or JWST 3603 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
or SJST 3603 - Jews and Muslims in Medieval Iberia [AH] (3.0 cr)
• RELS 3721 - 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)
• RELS 3071 - Greek and Hellenistic Religions [HIS] (3.0 cr)
or RELS 5071 - Greek and Hellenistic Religions (3.0 cr)
• RELS 4049 - Religion and Culture (3.0 cr)
or ANTH 4049 - Religion and Culture (3.0 cr)
• RELS 4309 - Religion in American Public Life: Culture, Politics, and Communities [CIV] (3.0 cr)
or SOC 4309 - Religion in American Public Life: Culture, Politics, & Communities [CIV] (3.0 cr)
• RELS 5252 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
or ARTH 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
or CNES 5188 - Art and Archaeology of Early Christianity and the Late Roman Empire (3.0 cr)
• RELS 5326 - Art of the Inka and their Ancestors (3.0 cr)
or ARTH 5802 - Art of the Inka and their Ancestors (3.0 cr)
• 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)
• RELS 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or CNES 3504 - Ancient Jewish Culture and Identity (3.0 cr)
or JWST 3504 - Ancient Jewish Culture and Identity (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 2016
- 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, Turgeniev, 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://www.russnet.org/why/index.html.

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

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

Required prerequisites
Beginning and Intermediate Russian
These courses, or equivalent, must be taken in sequential order. In select cases, students with advanced proficiency may be exempt from taking some or all of these courses. See the departmental advisor for more information.
Take 0 - 4 course(s) totaling 0 - 20 credit(s) from the following:
- RUSS 1101 - Beginning Russian I (5.0 cr)
- RUSS 1102 - Beginning Russian II (5.0 cr)
- RUSS 3001 - Intermediate Russian I (5.0 cr)
- RUSS 3002 - Intermediate Russian II (5.0 cr)

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

Program Requirements
Students are required to take 4 semester(s) of Russian.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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Information current as of December 01, 2016
The Russian major consists of a minimum of 32 upper division (3xxx and 5xxx) credits, of which 17 credits must be taken at the University of Minnesota-Twin Cities campus. At least one upper division course in the major (RUSS 3xxx-5xxx) must be writing intensive. All major coursework must be taken A-F. Students may earn a BA or a minor in Russian, but not both. The major program must be approved by the director of undergraduate studies.

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

**Advanced Language Courses**
Take the following 2 courses for a total of 8 credits.
- **RUSS 3101** - Advanced Russian I (4.0 cr)
- **RUSS 3102** - Advanced Russian II (4.0 cr)

**Major Courses**
Take the following 3 courses for a total of 9 credits.
- **RUSS 3421** - Literature: Middle Ages to Dostoevsky in Translation [LITR] (3.0 cr)
- **RUSS 3422** - Literature: Tolstoy to the Present in Translation [LITR] (3.0 cr)
- **RUSS 3512** - Russian Art and Culture [AH, GP] (3.0 cr)

**Electives**
Preparatory courses such as RUSS 3001 & RUSS 3002 do NOT count toward the electives requirement. Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- RUSS 3xxx
- RUSS 5xxx

**Major Project**
Take the following course for 3 credits.
- **RUSS 3311W** - Russian Major Project [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:
- **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 2016
• 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 adviser for more information.

Take 0 - 2 course(s) totaling 0 - 10 credit(s) from the following:

- **RUSS 1101** - Beginning Russian I (5.0 cr)
- **RUSS 1102** - Beginning Russian II (5.0 cr)

**Minor Requirements**

Students are required to take 2 semester(s) of Russian.

All minor coursework must be taken A-F. At least one course must be taken in the Russian program at the University of Minnesota Twin Cities campus. Students may earn a BA or a minor in Russian, but not both. The program must be approved by the director of undergraduate studies.

**Minor Courses**

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)

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

- **RUSS 3xxx**
- **RUSS 5xxx**
Twin Cities Campus

Sociology B.A.

Sociology
College of Liberal Arts

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• 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
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.

CLA BA degrees require 4 semester(s) or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this 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.

All incoming CLA freshmen must complete the First Year Experience course sequence.
### Required Courses
- SOC 3701 - Social Theory (4.0 cr)
- SOC 3801 - Sociological Research Methods [WI] (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)

### Electives
Students must complete at least five 3xxx-5xxx SOC elective courses.
Take 5 or more course(s) totaling 15 or more credit(s) from the following:

- SOC 3xxx
  - 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 4xxx
- 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 - Juvenile Law (3.0 cr)
- SOC 4145 - Youth Punishment & Corrections (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 5xxx
- 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 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)
- 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)
Senior Project
Take 4-6 credits. Before beginning the senior project, 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 senior project wait list. Students have three senior project registration options.

Seminar or Research
SOC 4966W - Major-Project Seminar [WI] (4.0 cr)
or SOC 4094W - Directed Research: Senior Project [WI] (4.0 cr)

or Independent Study
SOC 4967W - Advanced Senior Project Independent Study [WI] (1.0 cr)
The additional sociology elective must be pre-approved by the department adviser.
SOC 3xxx
or SOC 4xxx

or Honors
Honors students must take both pro-seminars, SOC 4977V and SOC 4978V, 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 3211W** - American Race Relations [DSJ, WI] (3.0 cr)
- **SOC 3251W** - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
- **SOC 3301W** - Politics and Society [WI] (3.0 cr)
- **SOC 3311W** - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
- **SOC 3322W** - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
- **SOC 3411W** - Organizations and Society [WI] (3.0 cr)
- **SOC 3421W** - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
- **SOC 3451V** - Honors: Cities & Social Change [WI] (3.0 cr)
- **SOC 3451W** - Cities & Social Change [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 4094W** - Directed Research: Senior Project [WI] (4.0 cr)
- **SOC 4101V** - Honors: Sociology of Law [WI] (3.0 cr)
- **SOC 4101W** - Sociology of Law [WI] (3.0 cr)
- **SOC 4966W** - Major-Project Seminar [WI] (4.0 cr)
- **SOC 4967W** - Advanced Senior Project Independent Study [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 2016
- 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
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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

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 senior 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.

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. MATH 1142 or 1271 should be taken before SOC 3811, and SOC 3811 should be taken before a Data Analysis course. SOC 4821 requires SOC 3811 Basic Social Statistics and SOC 3801 Sociological Research Methods to be completed before hand.

**MATH 1142** - Short Calculus [MATH] (4.0 cr)
**or MATH 1271** - Calculus I [MATH] (4.0 cr)
**SOC 3811** - Social Statistics [MATH] (4.0 cr)

**Data Analysis**
Note: SOC 3412, 3412H, and Soc 4821 cannot count both as an Elective and as a Quantitative course.

- **SOC 3412** - Social Networking: Theories and Methods [TS] (3.0 cr)
- **SOC 3412H** - Honors: Social Networking: Theories and Methods [TS] (3.0 cr)
- **SOC 4821** - Measuring the Social World: Concepts and Analysis (3.0 cr)
- **STAT 3022** - Data Analysis (4.0 cr)
- **STAT 3032** - Regression and Correlated Data (4.0 cr)

**Theory & Methods Courses**

- **SOC 3701** - Social Theory (4.0 cr)
- **SOC 3801** - Sociological Research Methods [WI] (4.0 cr)

**Electives**
Students must complete at least five 3xxx-5xxx SOC elective courses. Consult the departmental adviser 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:

- **SOC 3003** - Social Problems (3.0 cr)
- **SOC 3080** - 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 3301W** - 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** - Juvenile Law (3.0 cr)
- **SOC 4145** - Youth Punishment & Corrections (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 5455** - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
- **SOC 3101H** - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
- **SOC 3211W** - American Race Relations [DSJ, WI] (3.0 cr)
- **SOC 3211W** - American Race Relations [DSJ, WI] (3.0 cr)
- **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)
- **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)
- **RELS 3624** - Atheists & Others: Religious Outsiders in the United States [DSJ] (3.0 cr)
Senior Project

Choose one of the following three options and take 4-6 credits. Note: before beginning the senior project, students must complete all major coursework except one elective course. Students do not need to have completed their supportive field coursework (sub-plan) before beginning the senior project. Students who choose SOC 4967W must complete it with the same instructor as the additional elective.

Seminar or Research
SOC 4966W - Major-Project Seminar [WI] (4.0 cr)
or SOC 4094W - Directed Research: Senior Project [WI] (4.0 cr)
or Independent Study
SOC 4967W - Advanced Senior Project Independent Study [WI] (1.0 cr)
The additional sociology elective must be pre-approved by the department adviser.
SOC 3xxx
or SOC 4xxx
or SOC 5xxx
or Honors
Honors students must take the pro-seminars consecutively in their senior year. SOC 4977V is only offered in fall, and SOC 4978V is only offered in spring. Honors students must complete all core coursework and at least three electives before enrolling in SOC 4977V. At least four electives must be taken before enrolling in SOC 4978V.
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 3211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• SOC 3301W - Politics and Society [WI] (3.0 cr)
• SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 3411W - Organizations and Society [WI] (3.0 cr)
• SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
• SOC 3451V - Honors: Cities & Social Change [WI] (3.0 cr)
• SOC 3451W - Cities & Social Change [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 4094W - Directed Research: Senior Project [WI] (4.0 cr)
• SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
• SOC 4966W - Major-Project Seminar [WI] (4.0 cr)
• SOC 4967W - Advanced Senior Project Independent Study [WI] (1.0 cr)
• SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
• SOC 4978V - Senior Honors Proseminar II [WI] (3.0 cr)

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

Organization, Business, or Non-Profit
This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: some courses require prerequisites. Consult the university catalog for more information.

Supportive Field Courses
Note: ECON 1101 & 1102 are strongly recommended as pre-requisites for most of the following courses. Take 4 or more course(s) totaling 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 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 Manager Accounting (3.0 cr)
• AMIN 3314 - Natural Resource Management and Environmental Policy in Indian Country [ENV] (3.0 cr)
• AMIN 4511 - American Indian Political Economy (3.0 cr)

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• 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 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 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 3840 - Cooperative Organization (3.0 cr)
• APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
• BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
• CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
• CHIC 5374 - Migrant Farmworkers in the U.S.: Families, Work, and Advocacy [CIV] (4.0 cr)
• COMM 3411 - Introduction to Small Group Communication (3.0 cr)
• COMM 3441 - Introduction to Organizational Communication (3.0 cr)
• COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
• ECON 3101 - Intermediate Microeconomics (4.0 cr)
• ECON 3102 - Intermediate Macroeconomics (4.0 cr)
• 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)
• HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
• INS 4100 - Corporate Risk Management (2.0 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 3461 - Professional Sales Management (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 3489W - Citizens, Consumers, and Corporations [CIV, WI] (3.0 cr)
• SCO 3001 - Introduction to Operations Management (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)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• OLPD 3302 - Leadership, You, and Your Community (3.0 cr)
• or PA 3961 - Leadership, You, and Your Community (3.0 cr)
• OLPD 4303W - Leadership for Global Citizenship [WI] (3.0 cr)
• or PA 4961W - Leadership for Global Citizenship [GP, WI] (3.0 cr)

Health Care and Careers
This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: some courses require prerequisites. Consult the university catalog for more information.

Supportive Field Courses
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
• ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
• ADDS 5081 - Multicultural Foundations of Behavioral Health (3.0 cr)
• ANTH 3035 - Anthropologies of Death [SOCS, GP] (3.0 cr)
• ANTH 3306W - Medical Anthropology [GP, WI] (3.0 cr)
• CSCL 3472 - Gay Men and Homophobia in American Culture [DSJ] (3.0 cr)
• CSPH 5115 - Cultural Awareness, Knowledge and Health (3.0 cr)
• CSPH 5121 - Whole Systems Healing: Health and the Environment (2.0 cr)
• CSPH 5641 - Animals in Health Care: The Healing Dimensions of Human/Animal Relationships (3.0 cr)
• FSCN 3615 - Sociocultural Aspects of Food, Nutrition, and Health [GP] (3.0 cr)
Policy Analysis
This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: some courses require prerequisites. Consult the university catalog for more information.

Supportive Field Courses
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- AFRO 3426 - African Americans, Social Policy, and the Welfare State (3.0 cr)
- AMIN 3314 - Natural Resource Management and Environmental Policy in Indian Country [ENV] (3.0 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 3840 - Cooperative Organization (3.0 cr)
- APEC 4311 - Tourism Development: Principles, Processes, Policies (3.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 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 3331 - Geography of the World Economy [SOCS, GP] (3.0 cr)
- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- GEOG 3379 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GLOS 3303 - Environment and Development in the Third World [SOCS, ENV] (3.0 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)
- ID 3208 - Internship Reflection: Making Meaning of Your Experience (1.0 cr)
- HECU 3572 - Inequality in America: Political Sociology of Building Power, Change, and Equity [DSJ] (4.0 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 3302W - Moral Problems of Contemporary Society [CIV, WI] (4.0 cr)
- PHIL 3304 - Law and Morality [WI] (4.0 cr)
- POL 3235W - Democracy and Citizenship [CIV, WI] (3.0 cr)
Quantitative Emphasis
This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: 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 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- HIST 5970 - Advanced Research in Quantitative History (4.0 cr)
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
- PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
• PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
• PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
• PSY 5865 - Advanced Psychological and Educational Measurement (4.0 cr)
• PUBH 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 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)
• GEOG 3511 - Principles of Cartography (4.0 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 Minor
Sociology
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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
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 8 upper division credits must be taken from the Department of Sociology at the University of Minnesota-Twin Cities. Transfer students must meet the requirements either through approved coursework completed at their transfer institution or at the University of Minnesota-Twin Cities.

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.
SOC 3701 - Social Theory (4.0 cr)

Electives
Only one 1xxx-level course may count towards the minor.
Take 4 or more 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)

**Upper Division**
- Take 3 - 4 course(s) totaling 9 - 16 credit(s) from the following:
  - 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 3301 - Sociology of Families [SOCS, DSJ] (3.0 cr)
  - SOC 3311 - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
  - SOC 3411 - Organizations and Society [WI] (3.0 cr)
  - SOC 3415 - Consume This! The Sociology and Politics of Consumption (3.0 cr)
  - SOC 3421 - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
  - SOC 3451 - 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 [WI] (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 - Juvenile Law (3.0 cr)
• SOC 4145 - Youth Punishment & Corrections (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 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 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 - Transnational Migration: Networks of Power and Places [GP] (3.0 cr)
or GLOS 3705 - Transnational Migration: Networks of Power and Places [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 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)
• SOC 4141 - Juvenile Delinquency (3.0 cr)
• SOC 4170 - Sociology of International Law: Human Rights, Trafficking, and 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 4311 - Power, Justice & the Environment [DSJ] (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 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4451 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
• SOC 4451H - 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 2016
• 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 courses before admission to the program.

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

Required prerequisites
Preparatory Course
Note: this course does not factor into the overall length in credits of the major.
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.

CLA B.A. degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a B.A. at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

Before beginning the senior project, students must complete all major coursework except one elective course. Students must be on a pre-approved waiting list to register for the senior 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 B.A. or B.S. or minor in sociology; or a B.A. or B.S. or minor in sociology of law, criminology, and deviance.
All incoming CLA freshmen must complete the First Year Experience course sequence.

**Major Courses**

**Criminal Justice or Behavior**
Choose one of the following courses:
- SOC 1101 - Law, Crime, & Punishment (3.0 cr)
- or SOC 3102 - Criminal Behavior and Social Control (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)

**Theory & Methods**
- SOC 3701 - Social Theory (4.0 cr)
- SOC 3801 - Sociological Research Methods [WI] (4.0 cr)
- SOC 3811 - Social Statistics [MATH] (4.0 cr)

**Electives**
Students take 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 Electives**

Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- SOC 3003 - Social Problems (3.0 cr)
- SOC 3080 - Topics in Sociology (3.0 cr)
- SOC 3201 - Inequality: Introduction to Stratification (3.0 cr)
- SOC 3221 - Sociology of Gender (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 - Consuming 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 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 AAS 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
- SOC 3503H - Honors: Asian American Identities, Families & Communities [SOCS, DSJ] (3.0 cr)
  - or AAS 3503H - Honors: Asian American Identities, Families, & Communities [SOCS, DSJ] (3.0 cr)
- SOC 3505 - Transnational Migration: Networks of Power and Places [GP] (3.0 cr)
  - or GLOS 3705 - Transnational Migration: Networks of Power and Places [GP] (3.0 cr)
- SOC 3511 - World Population Problems [GP] (3.0 cr)
  - or SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
- SOC 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 GLOS 3681 - Gender and the Family in the Islamic World (3.0 cr)
• GLOS 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)
  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 4309 - 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 4411 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
  or GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4411 - Modern Sport: Its Power & Paradoxes (3.0 cr)
  or GLOS 4411 - Modern Sport: Its Power & Paradoxes (3.0 cr)
• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
  or SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
  or SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
• SOC 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 - Juvenile Law (3.0 cr)
• SOC 4145 - Youth Punishment & Corrections (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)
• 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)
• SOC 4104H - Honors: Crime and Human Rights (3.0 cr)
• GLOS 4104 - Crime and Human Rights (3.0 cr)
• GLOS 4104H - Honors: Crime and Human Rights (3.0 cr)
• SOC 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)
• Open Elective Course
  Take 0 or more course(s) from the following:
  • SOC 3xxx
  • SOC 4xxx
Senior Project
Take 1-2 courses for a total of 4-6 credits. All intro, all core classes, and all but one elective must be completed with a C- or higher before starting 4966W, 4967W, or 4094W.

Major-Project Seminar
Take 1 course for 4 credits. The Major-Project Seminar option requires department consent. Most students take 4966W to complete the Senior Project.
SOC 4966W - Major-Project Seminar [WI] (4.0 cr)

or Independent Study
Take 2 courses for a total of 4 credits. The Independent Study option requires instructor and department consent, and the instructor for both 4967W and the elective must be the same. The additional sociology elective must be pre-approved by the departmental advisor.
SOC 4967W - Advanced Senior Project Independent Study [WI] (1.0 cr)
SOC 3xxx
or SOC 4xxx
or SOC 5xxx

or Directed Research
Take 1 course for 4 credits. Students who choose the Directed Research option must receive instructor and department consent.
SOC 4094W - Directed Research: Senior Project [WI] (4.0 cr)

or Honors
Take 2 courses for a total of 6 credits. Students seeking honors in Sociology should take 4977V and 4978V to complete the Senior Project. 4977V is available in Fall only, and 4978V is available in the Spring only. Take 4977V and 4978V consecutively. Both courses require department consent.
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 3211W - American Race Relations [DSJ, WI] (3.0 cr)
• SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
• SOC 3301W - Politics and Society [WI] (3.0 cr)
• SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
• SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
• SOC 3411W - Organizations and Society [WI] (3.0 cr)
• SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
• SOC 3451V - Honors: Cities & Social Change [WI] (3.0 cr)
• SOC 3451W - Cities & Social Change [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 4094W - Directed Research: Senior Project [WI] (4.0 cr)
• SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
• SOC 4101W - Sociology of Law [WI] (3.0 cr)
• SOC 4966W - Major-Project Seminar [WI] (4.0 cr)
• SOC 4967W - Advanced Senior Project Independent Study [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 2016
- 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/.

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

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

Students who are interested in the BS option are encouraged to schedule a meeting with the departmental advisor to discuss the major and its requirements.

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

Required prerequisites
Preparatory Courses
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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

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 senior 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.

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. MATH 1142 or 1271 should be taken before SOC 3811, and SOC 3811 should be taken before STAT 3022. SOC 4821 requires SOC 3811 Basic Social Statistics and SOC 3801 Sociological Research Methods to be completed before hand.

MATH 1142 - Short Calculus [MATH] (4.0 cr)
   or MATH 1271 - Calculus I [MATH] (4.0 cr)

SOC 3811 - Social Statistics [MATH] (4.0 cr)

Data Analysis
Note: SOC 3412, 3412H, and Soc 4821 cannot count both as an Elective and as a Quantitative course
Take 1 or more course(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 4821 - Measuring the Social World: Concepts and Analysis (3.0 cr)
- STAT 3022 - Data Analysis (4.0 cr)
- STAT 3032 - Regression and Correlated Data (4.0 cr)

Criminal Justice or Criminal Behavior
SOC 1101 - Law, Crime, & Punishment (3.0 cr)
   or SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
   or SOC 3102 - Criminal Behavior and Social Control (3.0 cr)

Theory & Methods Courses
SOC 3701 - Social Theory (4.0 cr)
SOC 3801 - Sociological Research Methods [WI] (4.0 cr)

Electives
Students take at least four 3xxx-5xxx SOC elective courses. At least one course must be General SOC (non-31xx and non-41xx). At least two 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:
- 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 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)
• 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 - Transnational Migration: Networks of Power and Places [GP] (3.0 cr)
• GLOS 3705 - Transnational Migration: Networks of Power and Places [GP] (3.0 cr)
• SOC 3511 - World Population Problems [GP] (3.0 cr)
• SOC 3511H - Honors: World Population Problems [GP] (3.0 cr)
• SOC 3511 - 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)
• GLOS 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 3671 - Contemporary Chinese Society: Culture, Networks, & Inequality in China (3.0 cr)
• GLOS 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)
• RELS 3681 - Gender and the Family in the Islamic World (3.0 cr)
• SOC 4305 - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
• 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)
• SOC 4309H - Honors: Religion in American Public Life - Culture, Politics, & Communities [CIV] (3.0 cr)
• 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)
• GLOS 4311 - Power, Justice & the Environment [DSJ] (3.0 cr)
• SOC 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• GLOS 4315 - Never Again! Memory & Politics after Genocide [GP] (3.0 cr)
• SOC 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• GLOS 4321 - Globalize This! Understanding Globalization through Sociology [GP] (3.0 cr)
• SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4451 - Modern Sport: Its Power & Paradoxes (3.0 cr)
• SOC 4451H - Honors: Modern Sport: Its Power & Paradoxes (3.0 cr)
• SOC 4521 - Love, Sex, & Marriage (3.0 cr)
• SOC 4521H - Honors: Love, Sex, & Marriage (3.0 cr)
• SOC 4551 - Sociology of Sexualities [SOCS, DSJ] (3.0 cr)
• SOC 4551H - Honors: Sociology of Sexualities [SOCS, DSJ] (3.0 cr)

• LCD 31xx Courses
  Take 0 or more course(s) from the following:
  • SOC 3102 - Criminal Behavior and Social Control (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)

• LCD 41xx Courses
  Take 2 or more course(s) from the following:
  • SOC 4105 - Sociology of Punishment and Corrections (3.0 cr)
  • SOC 4106 - Crime on TV (3.0 cr)
  • SOC 4108 - Current Issues in Crime Control (3.0 cr)
  • SOC 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 - Juvenile Law (3.0 cr)
  • SOC 4145 - Youth Punishment & Corrections (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)
  • 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)

Senior Project
Choose one of the following three options and take 4-6 credits. Note: before beginning the senior project, students must complete all major coursework except one elective course. Students do not need to have completed their supportive field coursework (sub-plan) before beginning the senior project. Students who choose SOC 4967W must complete it with the same instructor as the additional elective.

Seminar or Research
SOC 4094W - Directed Research: Senior Project [WI] (4.0 cr)
or SOC 4966W - Major-Project Seminar [WI] (4.0 cr)
or Independent Study
SOC 4967W - Advanced Senior Project Independent Study [WI] (1.0 cr)
The additional sociology elective must be pre-approved by the departmental advisor.
SOC 3xxx
or SOC 4xxx
or SOC 5xxx
or Honors
Honors students must take the pro-seminars consecutively in their senior year. SOC 4977V is only offered in fall, and SOC 4978V is only offered in spring. Honors students must complete all core coursework and at least three electives before enrolling in SOC 4977V. At least four electives must be taken before enrolling in SOC 4978V.
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 3211W - American Race Relations [DSJ, WI] (3.0 cr)
•SOC 3251W - Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI] (3.0 cr)
•SOC 3301W - Politics and Society [WI] (3.0 cr)
•SOC 3311W - Hard Times & Bad Behavior: Homelessness & Marginality in the United States [WI] (3.0 cr)
•SOC 3322W - Social Movements, Protests, and Change [CIV, WI] (3.0 cr)
•SOC 3411W - Organizations and Society [WI] (3.0 cr)
•SOC 3421W - Sociology of Work: Good Jobs, Bad Jobs, No Jobs? [WI] (3.0 cr)
•SOC 3451V - Honors: Cities & Social Change [WI] (3.0 cr)
•SOC 3451W - Cities & Social Change [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 4094W - Directed Research: Senior Project [WI] (4.0 cr)
•SOC 4101V - Honors: Sociology of Law [WI] (3.0 cr)
•SOC 4101W - Sociology of Law [WI] (3.0 cr)
•SOC 4966W - Major-Project Seminar [WI] (4.0 cr)
•SOC 4967W - Advanced Senior Project Independent Study [WI] (1.0 cr)
•SOC 4977V - Senior Honors Proseminar I [WI] (3.0 cr)
•SOC 4978V - Senior Honors Proseminar II [WI] (3.0 cr)

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

Organization, Business, or Non-Profit
This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: some courses require pre-requisites. Consult the university catalog for more information.
Supportive Field Courses

Note: ECON 1101 & 1102 are strongly recommended as pre-requisites for most of the following courses.

Take 4 or more course(s) totaling 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 4023W - Communicating for Results [WI] (3.0 cr)
- ABUS 4041 - Dynamics of Leadership (3.0 cr)
- ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
- ABUS 4104 - Management and Human Resource Practices (3.0 cr)
- ABUS 4151 - Innovation for Leaders and Organizations (3.0 cr)
- ABUS 4509 - New Product Development (3.0 cr)
- ABUS 4515 - Strategy and Management for a Sustainable Future (3.0 cr)
- ABUS 4571W - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- ACCT 3001 - Introduction to Management Accounting (3.0 cr)
- AMIN 3114 - Natural Resource Management and Environmental Policy in Indian Country [ENV] (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 3001 - Applied Microeconomics: Consumers, Producers, and Markets (4.0 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 3840 - Cooperative Organization (3.0 cr)
- APEC 4511 - Tourism Development: Principles, Processes, Policies (3.0 cr)
- B LAW 3058 - The Law of Contracts and Agency (4.0 cr)
- CHIC 3374 - Migrant Farmworkers in the United States: Families, Work, and Advocacy [CIV] (4.0 cr)
- CHIC 5374 - Migrant Farmworkers in the U.S.: Families, Work, and Advocacy [CIV] (4.0 cr)
- COMM 3411 - Introduction to Small Group Communication (3.0 cr)
- COMM 3441 - Introduction to Organizational Communication (3.0 cr)
- COMM 3451W - Intercultural Communication: Theory and Practice [WI] (3.0 cr)
- ECON 3101 - Intermediate Microeconomics (4.0 cr)
- ECON 3102 - Intermediate Macroeconomics (4.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)
- FINM 3232W - Managing Recreational Lands [WI] (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
- INS 4100 - Corporate Risk Management (2.0 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 3461 - Professional Sales Management (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 3489W - Citizens, Consumers, and Corporations [DIV, WI] (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- OLPD 3302 - Leadership, You, and Your Community (3.0 cr)
  or PA 3961 - Leadership, You, and Your Community (3.0 cr)
- OLPD 4303W - Leadership for Global Citizenship [WI] (3.0 cr)
Health Care and Careers

This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: some courses require pre-requisites. Consult the university catalog for more information.

Supportive Field Courses

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

- **ABUS 4571W** - Introduction to Grant Writing for Health Care and Nonprofit Organizations [WI] (3.0 cr)
- **ADDS 5081** - Multicultural Foundations of Behavioral Health (3.0 cr)
- **ANTH 3035** - Anthropologies of Death [SOCS, GP] (3.0 cr)
- **ANTH 3306W** - Medical Anthropology [GP, WI] (3.0 cr)
- **CSPH 5121** - Whole Systems Healing: Health and the Environment (2.0 cr)
- **CSPH 5641** - Animals in Health Care: The Healing Dimensions of Human/Animal Relationships (3.0 cr)
- **GEOG 3411W** - Geography of Health and Health Care [WI] (4.0 cr)
- **GEOG 3561** - Principles of Geographic Information Science (4.0 cr)
- **HMED 3001W** - Health, Disease, and Healing I [HIS, WI] (4.0 cr)
- **HMED 3002W** - Health Care in History II [HIS, WI] (3.0 cr)
- **HMED 3040** - Human Health, Disease, and the Environment in History [HIS] (3.0 cr)
- **HMED 3055** - Women, Health, and History [HIS] (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** - Issues in Health Literacy and Communication (3.0 cr)
- **PHAR 4200W** - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
- **PHAR 5206** - Applied Health Literacy and Communication (3.0 cr)
- **PHIL 3302W** - Moral Problems of Contemporary Society [CIV, WI] (4.0 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)
- **PUBH 3802** - Health and Human Rights (3.0 cr)
- **PUBH 3807** - Global Health, Relief, Development and Religious and Non-religious NGOs (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)
- **WRIT 3562W** - Technical and Professional Writing [WI] (4.0 cr)
- **CSCL 3456W** - Sexuality and Culture [DSJ, WI] (3.0 cr)
- **CSCL 3456W** - Sexuality and Culture [DSJ, WI] (3.0 cr)

Policy Analysis

This sub-plan requires a minimum of four courses and at least 12-16 upper division credits. Note: some courses require pre-requisites. Consult the university catalog for more information.

Supportive Field Courses

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

- **AFRO 3426** - African Americans, Social Policy, and the Welfare State (3.0 cr)
- **AMIN 3314** - Natural Resource Management and Environmental Policy in Indian Country [ENV] (3.0 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 3840** - Cooperative Organization (3.0 cr)
- **APEC 4311** - Tourism Development: Principles, Processes, Policies (3.0 cr)
- **ECON 3101** - Intermediate Microeconomics (4.0 cr)
- **ECON 3102** - Intermediate Macroeconomics (4.0 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)
Quantitative Emphasis

This sub-plan requires a minimum of four courses and 12-16 upper division credits. Note: some courses require pre-requisites. 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 3531 - Numerical Spatial Analysis (4.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- HIST 5970 - Advanced Research in Quantitative History (4.0 cr)
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
- MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
- PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- PSY 5018H - Mathematical Models of Human Behavior (3.0 cr)
- PSY 5862 - Psychological Measurement: Theory and Methods (3.0 cr)
- PSY 5865 - Advanced Psychological and Educational Measurement (4.0 cr)
- PUBH 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 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)
- GEOG 3511 - Principles of Cartography (4.0 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 2016
• 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
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 8 upper-division credits must be taken at the University of Minnesota, Twin Cities. Transfer students must meet the requirements either through approved coursework completed at their transfer institution or at the University of Minnesota, Twin Cities. No course may count towards more than one minor requirement.

Minor Courses
Take 2 of the following courses for a total of 7 credits.

Law, Criminology, and Deviance Preparatory Course
SOC 1101 - Law, Crime, & Punishment (3.0 cr)
SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
SOC 3102 - Criminal Behavior and Social Control (3.0 cr)

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 - Juvenile Law (3.0 cr)
• SOC 4145 - Youth Punishment & Corrections (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)
or 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
Note: No more than one 1xxx-level course may count towards the minor. If a 1xxx-level course was used in the LCD Prep requirement (see: Minor Courses section), take a 2xxx, 3xxx, 4xxx or 41xx-level course to fulfill this requirement.

Take 1 or more course(s) totaling 3 or more credit(s) from the following:

• SOC 1001 - Introduction to Sociology [SOCS, DSJ] (4.0 cr)
• SOC 1101 - Law, Crime, & Punishment (3.0 cr)

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

• 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 [WI] (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 - Juvenile Law (3.0 cr)
• SOC 4145 - Youth Punishment & Corrections (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 4703 - Contemporary American Culture [CIV] (3.0 cr)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SOC 4821</td>
<td>Measuring the Social World: Concepts and Analysis</td>
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<td>SOC 5090</td>
<td>Topics in Sociology</td>
<td>1.0 - 3.0 cr</td>
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<td>SOC 5455</td>
<td>Sociology of Education</td>
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<td>SOC 5811</td>
<td>Social Statistics for Graduate Students [MATH]</td>
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<td>SOC 3101</td>
<td>Sociological Perspectives on the Criminal Justice System [CIV]</td>
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<td>Honors: Sociological Perspectives on the Criminal Justice System [CIV]</td>
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<td>SOC 3211W</td>
<td>American Race Relations [DSJ, WI]</td>
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<td>or AAS 3211W</td>
<td>American Race Relations [DSJ, WI]</td>
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<td>SOC 3251W</td>
<td>Sociological Perspectives on Race, Class, and Gender [SOCS, DSJ, WI]</td>
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<td>or AAS 3251W</td>
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<td>Atheists &amp; Others: Religious Outsiders in the United States [DSJ]</td>
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<td>Social Movements, Protests, and Change [CIV, WI]</td>
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<td>or SOC 3412H</td>
<td>Honors: Social Networking: Theories and Methods [TS]</td>
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<td>or SOC 5511</td>
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<td>SOC 3613W</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 3613V</td>
<td>Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3613W</td>
<td>Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3613V</td>
<td>Honors: Stuffed and Starved: The Politics of Eating [SOCS, GP, WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3671</td>
<td>Contemporary Chinese Society: Culture, Networks, &amp; Inequality in China [3.0 cr]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 3911</td>
<td>Contemporary Chinese Society: Culture, Networks, &amp; Inequality in China [3.0 cr]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 3681</td>
<td>Gender and the Family in the Islamic World [3.0 cr]</td>
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<tr>
<td>or SOC 3716</td>
<td>Gender and the Family in the Islamic World [3.0 cr]</td>
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<tr>
<td>or RELS 3716</td>
<td>Gender and the Family in the Islamic World [3.0 cr]</td>
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<tr>
<td>SOC 4101W</td>
<td>Sociology of Law [WI]</td>
<td>3.0 cr</td>
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<tr>
<td>or SOC 4101V</td>
<td>Honors: Sociology of Law [WI]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4102</td>
<td>Criminology [3.0 cr]</td>
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<tr>
<td>or SOC 4102H</td>
<td>Honors: Criminology [3.0 cr]</td>
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<tr>
<td>SOC 4104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4104H</td>
<td>Honors: Crime and Human Rights [3.0 cr]</td>
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<tr>
<td>or SOC 5104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4104</td>
<td>Crime and Human Rights</td>
<td>3.0 cr</td>
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<tr>
<td>or GLOS 4104H</td>
<td>Honors: Crime and Human Rights [3.0 cr]</td>
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</tr>
<tr>
<td>SOC 4135</td>
<td>Sociology of White-Collar Crime [3.0 cr]</td>
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<tr>
<td>or SOC 4135H</td>
<td>Honors: Sociology of White-Collar Crime [3.0 cr]</td>
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<tr>
<td>SOC 4141</td>
<td>Juvenile Delinquency</td>
<td>3.0 cr</td>
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<tr>
<td>or SOC 4141H</td>
<td>Honors: Juvenile Delinquency [3.0 cr]</td>
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<td>SOC 4170</td>
<td>Sociology of International Law: Human Rights, Trafficking, and Business Regulation [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4406</td>
<td>Sociology of International Law: Human Rights, &amp; Business Regulation [GP]</td>
<td>3.0 cr</td>
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<tr>
<td>SOC 4305</td>
<td>Environment &amp; Society: An Enduring Conflict [ENV]</td>
<td>3.0 cr</td>
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<tr>
<td>or GLOS 4305</td>
<td>Environment &amp; Society: An Enduring Conflict [ENV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4309</td>
<td>Religion in American Public Life: Culture, Politics, &amp; Communities [CIV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4309H</td>
<td>Honors: Religion in American Public Life: Culture, Politics, &amp; Communities [CIV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or RELS 4309</td>
<td>Religion in American Public Life: Culture, Politics, and Communities [CIV]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4311</td>
<td>Power, Justice &amp; the Environment [DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or SOC 4311</td>
<td>Power, Justice &amp; the Environment [DSJ]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4315</td>
<td>Never Again! Memory &amp; Politics after Genocide [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4315</td>
<td>Never Again! Memory &amp; Politics after Genocide [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4321</td>
<td>Globalize This! Understanding Globalization through Sociology [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>or GLOS 4221</td>
<td>Globalize This! Understanding Globalization Through Sociology [GP]</td>
<td>3.0 cr</td>
</tr>
<tr>
<td>SOC 4411</td>
<td>Terrorist Networks &amp; Counterterror Organizations [3.0 cr]</td>
<td></td>
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</table>
or SOC 4411H - Honors: Terrorist Networks & Counterterror Organizations (3.0 cr)
or SOC 5411 - Terrorist Networks & Counterterror Organizations (3.0 cr)
• SOC 4451 - Modern Sport: Its Power & Paradoxes (3.0 cr)
or SOC 4451H - Honors: Modern Sport: Its Power & Paradoxes (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 2016
- 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 area. 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
CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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 and Portuguese.

Students need to complete at least 6 of the upper-level major courses in residence. Three of these courses can be fulfilled either on campus or through a department sponsored study abroad programs. The other three courses need to 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 3003. Majors are required to study abroad in a Spanish or Portuguese speaking area for at least 6 weeks or take a semester long service learning course. The Spanish-Portuguese major requires 5-6 semesters of language, which goes above and beyond the second language requirement. Students pursuing a second CLA major may complete the senior project in their other major, but must substitute
three credits of advisor-approved SPAN 3xxx/5xxx elective with a SPAN 31xx pre-req, or PORT 3xxx/5xxx elective for SPAN 3972W. 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.

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)
- PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)

-Option 2
- SPAN 1001 - Beginning Spanish (5.0 cr)
- SPAN 1002 - Beginning Spanish (5.0 cr)
  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 1101 - Beginning Portuguese (5.0 cr)
- PORT 1102 - Beginning Portuguese (5.0 cr)
- PORT 1103 - Intermediate Portuguese (5.0 cr)
- PORT 1104 - Intermediate Portuguese (5.0 cr)

Advanced Language Courses
Take the following 2 courses for 8 credits.

- PORT 3003 - Portuguese Conversation and Composition (4.0 cr)
- SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)

Critical Analysis and Cultural Foundation Courses
Take the following 4 courses for 12 credits.

- 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)
- SPAN 3107W - Introduction to the Study of Hispanic Linguistics [WI] (3.0 cr)

Electives
Take 2 upper-division SPAN elective courses and 2 upper-division PORT elective courses for a total of 12 credits. At least two courses must have a SPAN 31xx prerequisite. Honors students must take at least one SPAN/PORT 5xxx-level course. Note: PORT 3001 is a preparatory course, and will not count toward the 'Electives' sub-requirement.

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

- SPAN 3211 - Interpreting Imperial Spain, 1492-1800 (3.0 cr)
- SPAN 3212 - Interpreting Modern and Contemporary Spain, 1800-Present (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 3502 - Modern Spain (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)

**Portuguese Electives**
Take 2 or more course(s) totaling 6 or more 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 min. 6-wk study abroad experience, or a semester-long service learning course. The study abroad req. must be fulfilled in a Spanish or Portuguese-speaking country, 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 dept. adviser prior to departure. The service learning req. is fulfilled by semester-long SPAN 3401, SPAN 3404, or other courses with adviser consent.

**Study abroad**
or **Service Learning**
Take 0 or more credit(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)

**Senior Seminar**
Majors fulfill the senior seminar requirement one of two ways: after all other major courses are complete, enroll in SPAN 3972W with departmental adviser permission, or enroll in a SPAN 5xxx or PORT 5xxx with instructor permission. Students seeking Honors in Spanish must enroll in SPAN 3972W.

SPAN 3972W - Graduation Seminar [WI] (3.0 cr)
or SPAN 5xxx
or PORT 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 3015W - Spanish Composition and Communication [WI] (4.0 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 2016
• Required credits to graduate with this degree: 6 to 8
• This certificate requires an intensive Spanish-language immersion experience. Complete either; (1) An academic study abroad experience of at least 6 weeks that includes at least 1 course taught in Spanish OR (2) a pre-approved immersion experience.
• 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 consists of six required components:
pass the Spanish LPE
complete two upper-division courses taught in Spanish* with a grade of C- or higher
complete a Spanish-language immersion experience
complete the self-assessment instrument
submit and pass a critical reflection essay
pass the ACTFL exam with a rating of Advanced Low or higher on the ACTFL reading, writing, listening, and speaking exams.

*A note about the coursework in Spanish: students have two options, both of which include completing at least one content-based course. A content-based course is defined as one that is focused on an 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 five pages. See the certificate website for a list of approved courses. Options include courses taught by the Department of Spanish and Portuguese Studies and other university departments. You may contact the Spanish and Portuguese Studies advisors about additional courses that may apply, such as courses taught abroad.

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.

Two Upper Division Courses Taught in Spanish
Complete two upper division courses taught in Spanish, for a total of 6-8 credits, with a grade of C- or higher. There are two options for completing this requirement:
Option 1: SPAN 3015 and one pre-approved content-based* course
Option 2: two pre-approved content-based* courses

*Content-based courses are defined under "Program Requirements" above.

Spanish-language Immersion
- Participate in an intensive Spanish-language immersion experience. There are two options for completing this requirement:
  - Option 1: Participate in an academic study abroad experience of at least six weeks that includes at least one course taught in Spanish
  - Option 2: Complete a pre-approved immersion experience, such as a service learning experience (see the Certificate website for a list of approved options)

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 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.

Pass the 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 2016
- 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, 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
CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

The Spanish Studies major is completed with a minimum of 54 credits and 15 courses, which includes 20 credits of preparatory coursework (SPAN 1001-1004 or equivalent), and 34 credits within the major. The major requires at least 5-6 semesters of language above and beyond the CLA second language requirement. Students pursuing a second CLA major may choose to complete the senior project requirement in their other major. These students are required to substitute 3 credits of advanced SPAN electives with a 31xx pre-req for SPAN 3972W. Students need to complete at least 6 of the upper level major courses in residence. Three of these courses
can be fulfilled either on campus or through department sponsored study abroad programs. The other three courses must be advanced elective courses (at least two with a critical analysis prerequisite) and must be taken on campus (Span 3972w/Span 5xxx/Port 5xxx counts towards this requirement).

The department administers two allowable degree combinations: Spanish Studies B.A. and Portuguese Studies minor, or Spanish Studies minor and Portuguese Studies minor. No other departmental degree combinations are allowed.

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)

Critical Analysis Courses
Take the following 3 courses for a total of 9 credits:

- 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)

Spanish Major Electives
Take 6 SPAN 3xxx courses. 4 of the 6 must have a Span Critical Analysis prereq. Of the 6, take 1 course from each area: culture, linguistics, and literature. As an elective, SPAN 3970 must be taken for 3 credits. Honors students must take at least 1 SPAN 5xxx course. Up to 1 approved course taught in English with coursework completed in Spanish can count toward the major as an elective without a Critical Analysis prereq. Written departmental consent is required during the first week of classes.

Take 6 or more course(s) totaling 18 or more credit(s) from the following:

Literature Electives
- SPAN 3211 - Interpreting Imperial Spain, 1492-1800 (3.0 cr)
- SPAN 3212 - Interpreting Modern and Contemporary Spain, 1800-Present (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 3910 - Topics in Spanish Peninsular Literature (3.0 cr)
- SPAN 3920 - Topics in Spanish-American Literature (3.0 cr)

Culture and Civilization Electives
- SPAN 3502 - Modern Spain (3.0 cr)
- SPAN 3510 - Issues in Hispanic Cultures (3.0 cr)
- SPAN 3512 - Modern Latin America (3.0 cr)
- SPAN 3800 - Film Studies in Spanish (3.0 cr)

Linguistics Electives
- 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 3970
Depending on the topic, this course may fulfill culture, literature, or linguistics requirement.

Take 0 or more course(s) from the following:

- SPAN 3970 - Directed Studies (1.0 - 4.0 cr)

Additional Electives
Any courses not used to fulfill culture/literature/linguistics requirements may be taken as additional electives.

Take 0 or more course(s) from the following:
- PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)
- SPAN 3022 - Advanced Business Spanish (4.0 cr)
  or SPAN 3044 - Advanced Medical Spanish (4.0 cr)
  or SPAN 3401 - Latino Immigration and Community Engagement [CIV] (3.0 cr)
  or SPAN 3404 - Medical Spanish and Community Health Service (3.0 cr)

**Senior Seminar**
Take a minimum of 3 credits. Majors fulfill the senior seminar requirement one of two ways: after all other major courses are complete, enroll in SPAN 3972W with departmental advisor permission, or enroll in a SPAN 5xxx with instructor permission. Students seeking Honors in Spanish must enroll in SPAN 3972W.
- SPAN 3972W - Graduation Seminar [WI] (3.0 cr)
  or 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 3015W - Spanish Composition and Communication [WI] (4.0 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 2016
- 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 area.

**Program Delivery**

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

**Minor Requirements**

The Spanish Studies minor requires a minimum of five upper-division courses and 16 credits. 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 one upper-division minor course must be completed at the University of Minnesota - Twin Cities campus. The department administers two allowable degree combinations: Spanish Studies B.A. 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 adviser 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)
- 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 the following course for 4 credits.
- SPAN 3015W - Spanish Composition and Communication [WI] (4.0 cr)

**Critical Analysis**

Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- 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)

**Elective with Critical Analysis Pre-requisite**

Note that some of the following courses carry pre-requisites. 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 3212 - Interpreting Modern and Contemporary Spain, 1800-Present (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 3502 - Modern Spain (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
• SPAN 3011W - Spanish Grammar and Composition Workshop [WI] (4.0 cr)
or SPAN 3022 - Advanced Business Spanish (4.0 cr)
or SPAN 3044 - Advanced Medical Spanish (4.0 cr)
or 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)
or SPAN 3404 - Medical Spanish and Community Health Service (3.0 cr)

• Electives not in Spanish
Only 1 course not in Spanish can count towards the Electives requirement. Coursework for courses taught in English must be completed in Spanish. Taking a course in English requires advanced written consent. See the departmental adviser for more information.
• SPAN 36xx or DUS-approved course outside the department
or PORT 3001 - Portuguese for Spanish Speakers (4.0 cr)
or PORT 3002 - Business 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 2016
- 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xx, 4xx, or 5xx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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.

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.

Major Courses
Take 11 courses for a total of 33-34 credits

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)
SLHS 1402 - The Talking Brain [SOCS] (3.0 cr)
or SLHS 1301W - The Physics and Biology of Spoken Language [PHYS] (4.0 cr)
or SLHS 1301V - The Physics and Biology of Spoken Language Honors [PHYS, WI] (4.0 cr)
SLHS 1401 - Communication Differences and Disorders [SOCS] (3.0 cr)
or SLHS 3401 - Communication Differences and Disorders [SOCS] (3.0 cr)

Senior Project
Take the following course for 3 credits.
SLHS 3402W - Major Project in Speech-Language-Hearing Sciences [WI] (3.0 cr)
or SLHS 3402V - Major 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 - Major Project in Speech-Language-Hearing Sciences [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 2016
• 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
No more than 3 credits for the minor may be directed study (SLHS 3994, SLHS 5993). 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)
**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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 52 to 53
- 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 program.

- **STAT 3011 - Introduction to Statistical Analysis** [MATH] (4.0 cr)
- **or STAT 3021 - Introduction to Probability and Statistics** (3.0 cr)

**General Requirements**

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

**Program Requirements**

Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

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 2 courses for a total of 8 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)

Programming for Statisticians
Take 1 of the following courses for 4 credits.
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 2021 - Machine Architecture and Organization (4.0 cr)

Major Courses
Take 6 courses for a total of 23 credits. Choose 1 Theory of Statistics 2-course sequence.
STAT 3032 - Regression and Correlated Data (4.0 cr)
STAT 3701 - Introduction to Statistical Computing (3.0 cr)
STAT 4051 - Applied Statistics I (4.0 cr)
STAT 4052 - Applied Statistics II (4.0 cr)

Choose a Theory of Statistics course group:

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.

STAT Electives
Students planning to pursue a minor in mathematics, or an advanced degree in statistics or biostatistics should consult the undergraduate adviser for suggested coursework.
Take 11 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 5401 - Applied Multivariate Methods (3.0 cr)
- STAT 5421 - Analysis of Categorical Data (3.0 cr)
- STAT 5511 - Time Series Analysis (3.0 cr)
- STAT 5601 - Nonparametric Methods (3.0 cr)
- STAT 5931 - Topics in Statistics (3.0 cr)
- STAT 5932 - 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 [WI] (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 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)
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<td>Mathematical Analysis of Biological Networks</td>
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<tr>
<td>MATH 5447</td>
<td>Theoretical Neuroscience</td>
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<td>MATH 5467</td>
<td>Introduction to the Mathematics of Image and Data Analysis</td>
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<td>MATH 5535</td>
<td>Introduction to Ordinary Differential Equations</td>
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<td>Elementary Partial Differential Equations I</td>
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<td>Elementary Partial Differential Equations II</td>
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<td>Prediction and Filtering</td>
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<td>Topics in Hierarchical Bayesian Analysis</td>
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<td>Biostatistical Methods in Translational and Clinical Research</td>
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<td>SAS Procedures and Data Analysis</td>
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<td>PUBH 7415</td>
<td>Introduction to Clinical Trials</td>
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<td>or HSCI 4321</td>
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**Senior Project: Consultation and Communication for Statisticians**

This course is required of all majors, including double-majors who have met the writing intensive requirement in the other major. Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

- STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)

**Upper Division Writing Intensive within the major**

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

- STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 63 to 68
- 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.

Required prerequisites

Preparatory Course

Complete STAT 3011 or STAT 3021 with a grade of C- or better in order to declare the Statistical Science B.S. program.

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

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

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 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 2274 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- or MATH 2573H - Honors Calculus III (4.0 cr)

Linear Algebra
Take one of the following sequences, for either 4 or 8 credits. Students planning to minor in mathematics should take Option 2.

Option 1
CSCI 2033 - Elementary Computational Linear Algebra (4.0 cr)

or Option 2
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
MATH 4242 - Applied Linear Algebra (4.0 cr)

or 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 1 course for 4 credits.
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 2021 - Machine Architecture and Organization (4.0 cr)

Major Courses
Take 6 courses for a total of 23 credits.
STAT 3032 - Regression and Correlated Data (4.0 cr)
STAT 3701 - Introduction to Statistical Computing (3.0 cr)
STAT 4051 - Applied Statistics I (4.0 cr)
STAT 4052 - Applied Statistics II (4.0 cr)
STAT 5101 - Theory of Statistics I (4.0 cr)
 STAT 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.
Take 14 or more credit(s) from the following:

STAT Electives
Students planning to pursue a minor in mathematics, or an advanced degree in statistics or biostatistics should consult the undergraduate adviser for suggested coursework.
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 5401 - Applied Multivariate Methods (3.0 cr)
- STAT 5421 - Analysis of Categorical Data (3.0 cr)
- STAT 5511 - Time Series Analysis (3.0 cr)
- STAT 5601 - Nonparametric Methods (3.0 cr)
- STAT 5931 - Topics in Statistics (3.0 cr)
- STAT 5932 - 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 [WI] (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 - 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 5385H - 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 5537 - Complex Analysis (4.0 cr)
• MATH 5587 - Elementary Partial Differential Equations I (4.0 cr)
• MATH 5588 - Elementary Partial Differential Equations II (4.0 cr)
• MATH 5615H - Honors: Introduction to Analysis I (4.0 cr)
• MATH 5616H - Honors: Introduction to Analysis II (4.0 cr)
• MATH 5652 - Introduction to Stochastic Processes (4.0 cr)
• MATH 5654 - Prediction and Filtering (4.0 cr)
• MATH 5705 - Enumerative Combinatorics (4.0 cr)
• MATH 5711 - Linear Programming and Combinatorial Optimization (4.0 cr)
• PUBH 3415 - Introduction to Clinical Trials - Online (3.0 cr)
• PUBH 6420 - Introduction to SAS Programming (1.0 cr)
• PUBH 6431 - Topics in Hierarchical Bayesian Analysis (1.0 cr)
• PUBH 6432 - Biostatistical Methods in Translational and Clinical Research (1.0 cr)
• PUBH 6470 - SAS Procedures and Data Analysis (3.0 cr)
• PUBH 7415 - Introduction to Clinical Trials (3.0 cr)
• WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
• CSCI 4203 - Computer Architecture (4.0 cr)
  or EE 4363 - Computer Architecture and Machine Organization (4.0 cr)
• CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
  or HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
• CSCI 5204 - Advanced Computer Architecture (3.0 cr)
  or EE 5364 - Advanced Computer Architecture (3.0 cr)

Take at most 6 credit(s) from the following:
• STAT 1905 - Freshman Seminar (3.0 cr)

Senior Project: Consultation and Communication for Statisticians
This course is required of all majors, including double-majors who have met the writing intensive requirement in the other major. Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)
**Twin Cities Campus**

**Statistics B.A.**

Statistics, School of

College of Liberal Arts

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 51 to 55
- Degree: Bachelor of Arts

Statistics is concerned with theories and methods of data collection, tabulation, analysis, and interpretation, and their use in learning from data and making decisions.

A bachelor's degree gives students an understanding of the theory of statistics and trains them in basic use of the most important types of statistical methods. The degree prepares students for graduate work or for jobs in diverse areas as marketing analysis, quality management, and support for scientific research.

**Program Delivery**

This program is available:

- via classroom (the majority of instruction is face-to-face)

**Admission Requirements**

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

**General Requirements**

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](#). Required courses for the major or minor in which a 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 two years of mathematics, one course in computer programming, and 26 credits of STATS 3xxx or higher (two courses in statistical theory, two courses in statistical methods, at least three elective courses in statistics, and a senior project).

Students may earn no more than one degree from the Statistics program: a B.A. or a B.S. or a minor.

Beginning fall 2012, all incoming CLA freshmen must complete the appropriate First Year Experience course sequence. Specific information about this collegiate requirement can be found at: [http://class.umn.edu/degree_requirements/index.html](http://class.umn.edu/degree_requirements/index.html)

**Mathematics**

Take a total of five courses for twenty credits.

- MATH 1271 - Calculus I [MATH] (4.0 cr)
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- MATH 1372 - CSE Calculus II (4.0 cr)
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)

or **Honors Sequence**

- 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)
- MATH 2574H - Honors Calculus IV (4.0 cr)
- MATH 4242 - Applied Linear Algebra (4.0 cr)
Major Courses
Take four courses for 15-16 credits.
STAT 3022 - Data 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)
Choose a theory course group:
Option 1
STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
Option 2
STAT 5101 - Theory of Statistics I (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)
Option 3
MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)
STAT 5102 - Theory of Statistics II (4.0 cr)

Programming for Statisticians
Take one course for 4 credits.
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 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
or CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)

Electives
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
• STAT 5031 - Statistical Methods for Quality Improvement (4.0 cr)
• STAT 5041 (Inactive) (3.0 cr)
• STAT 5201 - Sampling Methodology in Finite Populations (3.0 cr)
• STAT 5302 - Applied Regression Analysis (4.0 cr)
• STAT 5303 - Designing Experiments (4.0 cr)
• STAT 5401 - Applied Multivariate Methods (3.0 cr)
• STAT 5421 - Analysis of Categorical Data (3.0 cr)
• STAT 5511 - Time Series Analysis (3.0 cr)
• STAT 5601 - Nonparametric Methods (3.0 cr)
• STAT 5931 - Topics in Statistics (3.0 cr)
• STAT 5932 - Topics in Statistics (3.0 cr)

Senior Project
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)
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 2016
• 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.

The following courses may NOT be used to fulfill the minor requirements: (STAT 1001, STAT 3011, STAT 3021, STAT 5021). Students who declared their minor prior to fall 2015 may include one of STAT 3011 or STAT 3021.

Freshman Seminars (STAT 19XX) and Honors Seminars (HSEM) taught by School of Statistics faculty may fulfill the minor requirements.

Minor Courses
Take 14 or more credit(s) from the following:
• STAT 1905 - Freshman Seminar (3.0 cr)
• STAT 3501 - Internship in Statistical Practice (1.0 cr)
• Only one course in the following course pairs can count towards the Major Courses requirement: (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)

• 4xxx and 5xxx-level Courses
At least 2 courses must be taken at the 4xxx or 5xxx level.
Take 2 or more course(s) from the following:
• STAT 4051 - Applied Statistics I (4.0 cr)
• STAT 4052 - Applied Statistics II (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 5701 - Statistical Computing (3.0 cr)
• STAT 5931 - Topics in Statistics (3.0 cr)
• STAT 5932 - Topics in Statistics (3.0 cr)
• STAT 5993 - Tutorial (1.0 - 6.0 cr)

• Theory of Statistics
At most one of the following course groupings may be included: (STAT 4101 and 4102) or (STAT 5101 and 5102) or (MATH 5651 and STAT 5102).

STAT 4101 - Theory of Statistics I (4.0 cr)
STAT 4102 - Theory of Statistics II (4.0 cr)
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)
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 2016
- 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 major replaced the film studies major. Currently-declared film studies majors have the option of either completing their degree in film studies or transferring to the new SCMC major. The director of undergraduate studies 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

All major courses must be taken A-F. At least one upper division (3xxx or above) course in the major must be writing intensive.

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.

Section A - Major Courses
Take at least three courses for a minimum of 12 credits. SCMC 5001 or 5002 may also serve as a basis for the senior project.
Take 3 or more course(s) totaling 12 or more credit(s) from the following:
Take 1 or more course(s) from the following:
Section B - Context: Society, History, Culture Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- AMST 3252W - American Popular Culture and Politics: 1800 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 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)
- JOUR 3614 - History of Media Communication [HIS, TS] (3.0 cr)
- JOUR 3745 - Mass Media and Popular Culture [AH, DSJ] (3.0 cr)
- HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
or CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)

Section B - Practice: Production and Training Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- ARTS 3602 - Narrative Digital Video (4.0 cr)
- ARTS 3603 - Experimental Video (4.0 cr)
- ARTS 5620 - Narrative Digital Video (4.0 cr)
- ARTS 5630 - Advanced Experimental Video (4.0 cr)
- COMM 3201 - Introduction to Electronic Media Production (3.0 - 4.0 cr)
- COMM 3204 - Advanced Electronic Media Production (4.0 cr)
- ENGW 4250 - Screenwriting (3.0 cr)
- SCMC 3201 - Fundamentals of Digital Filmmaking (4.0 cr)
- SCMC 3202 - Intermediate Digital Filmmaking (4.0 cr)
- TH 4550 - Video Technology (3.0 cr)

Section B - Difference: National, International, and "Foreign" Cinemas Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:

- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3556 - Korean Film (3.0 cr)
- AMIN 3304 - Indigenous Filmmakers [AH] (3.0 cr)
- CSCL 3176 - 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)
- JOUR 3741 - Diversity and Mass Communication [DSJ] (3.0 cr)
- AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
or ARTH 3655 - African-American Cinema [AH, DSJ] (3.0 cr)

Section B - Analysis: Theory, Method, Critique Courses
Note: SCMC 5001 fulfills the Section B - Analysis requirement only if not previously counted toward the Section A - Major Courses requirement.
Take 3 or more 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 3115 - Cinema and Ideology [AH] (4.0 cr)
- CSCL 3177 - 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)

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Information current as of December 01, 2016
Section C - Electives

Take at least 3 courses, of which no more than one may be at the 1xxx-level. 3xxx-5xxx courses taken in Section C may also serve as a basis for the senior project. Courses used to fulfill other program requirements may not be counted toward Section C. Students may count a 3xxx-5xxx directed study as long as it is pre-approved by the departmental adviser.

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

- **AFRO 3654** - African Cinema [AH, GP] (4.0 cr)
- **ALL 3356W** - Chinese Film [AH, WI] (3.0 cr)
- **ALL 3456** - Japanese Film [GP] (3.0 cr)
- **ALL 3556** - Korean Film (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 3601** - New Media: Making Art Interactive (4.0 cr)
- **ARTS 3602** - Narrative Digital Video (4.0 cr)
- **ARTS 3603** - Experimental Video (4.0 cr)
- **ARTS 3703** - Photography: Digital Imaging (4.0 cr)
- **ARTS 5610** - New Media: Making Art Interactive (4.0 cr)
- **ARTS 5620** - Narrative Digital Video (4.0 cr)
- **ARTS 5630** - Advanced Experimental Video (4.0 cr)
- **COMM 3201** - Introduction to Electronic Media Production (3.0 - 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 3115** - Cinema and Ideology [AH] (4.0 cr)
- **CSCL 3176** - Oppositional Cinemas [GP] (4.0 cr)
- **CSCL 3177** - 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** - Mass 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 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)
- **TH 4550** - Video Technology (3.0 cr)
- **AFRO 3655** - African-American Cinema [AH, DSJ] (3.0 cr)
- **ARTH 3655** - African-American Cinema [AH, DSJ] (3.0 cr)
- **GEOG 3374W** - The City in Film [AH, WI] (4.0 cr)
- **GEOG 5374** - The City in Film (4.0 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)
- **GWSS 3409W** - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- **AAS 3409W** - Asian American Women's Cultural Production [AH, DSJ, WI] (3.0 cr)
- **HSCI 4321** - History of Computing [TS, HIS] (3.0 cr)
- **CSCI 4921** - History of Computing [TS, HIS] (3.0 cr)

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

- **ALL 1001** - Asian Film and Animation (3.0 cr)
- **ARTH 1921W** - Introduction to Film Study [AH, WI] (4.0 cr)
• ARTS 1601 - Experimental and Media Arts [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)
  or SCMC 1201W - Cinema [AH, WI] (4.0 cr)
• JOUR 1001 - Introduction to Mass Communication [SOCS, TS] (3.0 cr)
  or JOUR 1001H - Honors: Introduction to Mass Communication [SOCS, TS] (3.0 cr)

• Directed Study, Internships, and Topics

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 no more than 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. The course number of the internship or directed study should be selected appropriate to the home department (3993, 4993, or 5993).

Take no more than 2 course(s) from the following:
• CSCL 3993 - Directed Study (1.0 - 3.0 cr)
• CSCL 4944H - Honors Thesis (3.0 cr)
• CSCL 4993 - Directed Study (1.0 - 3.0 cr)
• CSCL 5993 - Directed Study (1.0 - 3.0 cr)
• SCMC 3993 - Directed Study (1.0 - 3.0 cr)
• SCMC 4993 - Directed Study (1.0 - 3.0 cr)
• SCMC 5993 - Directed Study (1.0 - 3.0 cr)

• Topics

With prior written approval from the undergraduate adviser or director of undergraduate studies, topics courses may count towards a 'Section B' course group above.

Take no more than 2 course(s) from the following:
• Topics courses approved on case-by-case basis

Senior Project
Although SCMC emphasizes contextual analysis, history, and theory, production projects (e.g., short films, video installations) are welcome. The senior project requirement is fulfilled by completing one of the following options as part of the 33-credit graduation minimum:

Take 0 or more credit(s) from the following:
• (1) Completion of a project within a directed study (SCMC 3993, 4993, 5993)
• (2) Completion of a project within a 3xxx or 4xxx course (arrangement with instructor)
• (3) Completion of coursework, including substantial writing, in any SCMC 5xxx course
• (4) Completion of an Honors thesis or project (CSCL 4944H or other departmental Honors thesis course)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
• CSCL 3274W - The City in Film [AH, WI] (4.0 cr)
• GEOG 5374 - The City in Film (4.0 cr)
• GER 3604W - Introduction to German Cinema [AH, GP, WI] (3.0 cr)
• SCMC 3001W - History of Cinema and Media Culture [WI] (4.0 cr)
• 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)
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 2016
- 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.

Minor Courses
Take 1 of the following courses for a total of 4 credits.
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)

Electives
Take at least 14 credits of electives at the 3xxx-5xxx level.
Take 14 or more credit(s) from the following:
- AFRO 3654 - African Cinema [AH, GP] (4.0 cr)
- AFRO 3655 - African-American Cinema [AH, DSJ] (3.0 cr)
- ALL 3356W - Chinese Film [AH, WI] (3.0 cr)
- ALL 3456 - Japanese Film [GP] (3.0 cr)
- ALL 3556 - Korean Film (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 3601 - New Media: Making Art Interactive (4.0 cr)
- ARTS 3602 - Narrative Digital Video (4.0 cr)
- ARTS 3603 - Experimental Video (4.0 cr)
- ARTS 3703 - Photography: Digital Imaging (4.0 cr)
- ARTS 6610 - New Media: Making Art Interactive (4.0 cr)
- ARTS 6620 - Narrative Digital Video (4.0 cr)
- ARTS 6630 - Advanced Experimental Video (4.0 cr)
- COMM 3201 - Introduction to Electronic Media Production (3.0 - 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 3115 - Cinema and Ideology [AH] (4.0 cr)
- CSCL 3176 - Oppositional Cinemas [GP] (4.0 cr)
- CSCL 3177 - On Television [CIV] (3.0 cr)
- CSCL 3212W - Documentary Cinema: History and Politics [WI] (4.0 cr)
- CSCL 3993 - Directed Study (1.0 - 3.0 cr)
- CSCL 4993 - Directed Study (1.0 - 3.0 cr)
- CSCL 5411 - Avant-Garde Cinema (4.0 cr)
- CSCL 5993 - Directed Study (1.0 - 3.0 cr)
- ENGL 3040 - Studies in Film (3.0 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 - Mass 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 3993 - Directed Study (1.0 - 3.0 cr)
- SCMC 4993 - Directed Study (1.0 - 3.0 cr)
- SCMC 5001 - Critical Debates in the Study of Cinema and Media Culture (4.0 cr)
- SCMC 5002 - Advanced Film Analysis (4.0 cr)
- SCMC 5993 - Directed Study (1.0 - 3.0 cr)
- SPAN 3800 - Film Studies in Spanish (3.0 cr)
- TH 4550 - Video Technology (3.0 cr)
- AMIN 3402 - American Indians and the Cinema [AH, DSJ] (3.0 cr)
- GEOG 3374W - The City in Film [AH, WI] (4.0 cr)
  or GEOG 5374 - The City in Film (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)
- HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
  or CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
Swedish Minor

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 adviser 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.

The minor consists of a minimum of 16 credits in 3xxx and 5xxx courses with no more than one course being a directed or independent study. All courses must be taken A-F and must be completed with a grade of C- or better. At least one course must be taken in the Scandinavian program at the University of Minnesota - Twin Cities campus. 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. The minor program must be approved by the director of undergraduate studies.

Minor Courses

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

- SCAN 3011W - Readings in Scandinavian Languages [WI] (4.0 cr)

Take 4 or more course(s) totaling 12 or more credit(s) from the following:

- SCAN 3xxx
- SCAN 4xxx
- SCAN 5xxx
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 2016
• 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
Universal requirements:
Complete a minimum of 8 credits at the University of Minnesota - Twin Cities campus
Complete all courses with a grade of C- or higher
Produce a capstone project: The purpose of the capstone project is (1) to further develop and reflect on what you have learned through your certificate coursework and (2) to provide you with a tangible product that can be used for job applications and during interviews. The one-credit capstone project must be added on to WRIT 3562W or the WRIT elective that you take for the certificate. The capstone project will be evaluated by the instructor of the chosen WRIT course. If necessary to the project, an outside reader with subject matter expertise will be invited to also read and provide input. Projects will be evaluated on the following criteria: how well the project is written, organized and designed; how well the project extends an existing assignment; how well the project illustrates communication principles such as style, clarity and design; how well the project demonstrates rhetorical components of audience, purpose, message and context; how well the project addresses insights into communication in the student's specific field (science, engineering, architecture, political science, etcetera). Consult the departmental advisor for further details.

Required Course
Take the following course for 4 credits.
WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)

Elective Course
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• WRIT 3257 - Technical and Professional Presentations (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)
or Students may substitute one of the following courses as an elective with prior approval from the WRIT departmental advisors.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• WRIT 3441 - Editing, Critique, and Style (3.0 cr)
• WRIT 3671 - Visual Rhetoric and Document Design (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
Take WRIT 3291 as a 1-cr. ‘add-on’ to either of the certificate’s required courses. The capstone project extends an assignment in the selected course to further explore an aspect of technical communication. The project must be developed in consultation with the instructor of the selected course, and all work must be completed within the same semester. Project formats include a paper, report, podcast, video, scientific poster, or electronic presentation. Consult dept. advisor for full 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 52
- 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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

All required courses must be taken A-F and students must earn a grade of at least C-.

Equivalent transfer courses are accepted in all areas (except for required WRIT courses).
Students must complete a minimum of 37 credits of WRIT courses, plus 15 credits of courses within one of four sub-plan areas.

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

Core Courses
Take 7 courses for a total of 24 credits.
- WRIT 3001 - Introduction to Technical Writing and Communication (3.0 cr)
- WRIT 3221W - Communication Modes and Methods [WI] (4.0 cr)
- WRIT 3441 - Editing, Critique, and Style (3.0 cr)
- WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
- WRIT 3671 - Visual Rhetoric and Document Design (3.0 cr)
- WRIT 3701W - Rhetorical Theory for Writing Studies [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)

Required Electives
Students must take at least 6 credits from each of the two categories for a total of 12 credits. 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] (4.0 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 3152W - Writing on Issues of Science and Technology [WI] (4.0 cr)
• WRIT 3315 - Writing on Issues of Land and the Environment [AH, DSJ] (3.0 cr)
• WRIT 3361 - Literature of Social Movements in the United States: 1950 to Present [LITR, CIV] (3.0 cr)
• WRIT 3371W - Technology, Self, and Society [TS, WI] (3.0 cr)
• WRIT 3381W - Writing and Modern Cultural Movements [AH, WI] (3.0 cr)
• WRIT 3405W - Humanistic Healthcare and Communication [AH, WI] (3.0 cr)
• WRIT 3577W - Rhetoric, Technology, and the Internet [TS, WI] (3.0 cr)
• WRIT 4431W - Science, Technology, and the Law [CIV, WI] (3.0 cr)
• WRIT 4501 - Usability and Human Factors in Technical Communication (3.0 cr)
• WRIT 4664W - Science Writing for Popular Audiences [WI] (3.0 cr)

Senior Project
The senior project is completed during the final year of coursework. Take WRIT 4995 (1 cr.) in conjunction with any 3xxx- or 4xxx-level WRIT course. The following WRIT courses are suggested: WRIT 3102W, WRIT 3221, WRIT 3244W, WRIT 3361, WRIT 3381W, WRIT 3441, WRIT 3577W, WRIT 3671, WRIT 3701W, WRIT 4501, or WRIT 4662W. Instructor consent is required prior to registration.

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

• WRIT 4995 - 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:

• 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 3152W - Writing on Issues of Science and Technology [WI] (4.0 cr)
• WRIT 3221W - Communication Modes and Methods [WI] (4.0 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] (4.0 cr)
• WRIT 3751W - Seminar: Theory and Practice of Writing Consultancy [WI] (4.0 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)

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

Information Technology and Design

Required Courses
Complete 15 credits in the sub-plan. Six of the 15 credits must be taken at 3xxx or above. Other courses may be allowed; see department adviser for final consent. Note: 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.
Take 15 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 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
- CSCI 2011 - Discrete Structures of Computer Science (4.0 cr)
- DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
- DES 2101 - Design and Visual Presentation (2.0 cr)
- GDES 2361 - Design Process: Photography (3.0 cr)

• 3xxx Level and Above
Take 6 or more credit(s) from the following:
- COMM 3201 - Introduction to Electronic Media Production (3.0 - 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)
- HUMF 5001 - Foundations of Human Factors/Ergonomics (3.0 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 - New 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 CSCI 4921 - History of Computing [TS, HIS] (3.0 cr)
- KIN 3505 - Intro to Human-Centered Design (3.0 cr)
  or KIN 5505 - Human-Centered Design - Principles and Applications (3.0 cr)

Biological and Health Sciences
Required Courses
Students must complete 15 credits in the sub-plan. Six of the 15 credits must be taken at 3xxx or above. Other courses may be allowed in consultation with department adviser.

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.
Take 15 or more credit(s) from the following:
- BIOL 1010 - Human Health and Disease (3.0 cr)
- BIOL 1101 - Genetics and Society [CIV] (3.0 cr)
- BIOL 1010 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 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)
- PHAR 1006 - Orientation to Health Literacy and Communication (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 1062 - Chemical Principles II [PHYS] (3.0 cr)
  with CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)

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Information current as of December 01, 2016
• CHEM 2302 - Organic Chemistry II (3.0 cr)
  or CHEM 2304 - Organic Chemistry II for the Life Sciences (3.0 cr)

3xxx Level and Above
Take 6 or more credit(s) from the following:
• ANAT 3001 - Human Anatomy (3.0 cr)
• BIOL 3021 - Biochemistry (3.0 cr)
• BIOL 4003 - Genetics (3.0 cr)
• BIOL 4004 - Cell Biology (3.0 cr)
• NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
• NSCI 3100 - Mind and Brain (3.0 cr)
• PHAR 3206 - Issues in Health Literacy and Communication (3.0 cr)
• PHAR 3601 - Basic Human Physiology for the Health Professions (3.0 cr)
• PHAR 4200W - Drugs and the U.S. Healthcare System [CIV, WI] (3.0 cr)
• PHAR 5201 - Applied Health Sciences Terminology (2.0 cr)
• PHCL 3100 - Pharmacology for Pre-Med and Life Science Students (2.0 cr)
• PHIL 3601W - Scientific Thought [WI] (4.0 cr)
• PHIL 3601W - Neuroscience and Society [CIV, WI] (4.0 cr)
• PHIL 3601W - Human Physiology (4.0 cr)
• PUBH 3004 - Basic Concepts in Personal and Community Health (4.0 cr)
• PUBH 3106 - Making Sense of Health Studies (2.0 cr)
• PUBH 3315 - Clinical Research from Lab to Bedside to Populations (2.0 cr)
• PUBH 3350 - Epidemiology: People, Places, and Disease (2.0 cr)
• PUBH 3415 - Introduction to Clinical Trials - Online (3.0 cr)
• PUBH 3905 - Nutrition for Public Health Promotion and Disease Prevention (2.0 cr)
• STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
• PHIL 1001 - Introduction to Logic [MATH] (4.0 cr)
• PHIL 1004W - Introduction to Political Philosophy [AH, CIV, WI] (4.0 cr)
• 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)

Legal Discourse and Public Policy
Required Courses
Complete 15 credits in the sub-plan. Six of the 15 credits must be taken at 3xxx or above. Other courses may be allowed, see departmental adviser for final consent. Note: 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.
Take 15 or more 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)
  or POL 1001H - Honors Course: American Democracy in a Changing World [SOCS] (4.0 cr)

3xxx Level and Above
Take 6 or more credit(s) from the following:
• COMM 3631 - Freedom of Speech [CIV] (3.0 cr)
• CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
• GWSS 3415 - Feminist Perspectives on Domestic Violence and Sexual Assault [DSJ] (3.0 cr)
• HIST 3835 - Law in American Life: 1865 to Present (3.0 cr)
• JOUR 3775 - Administrative Law and Regulation for Strategic Communication [CIV] (3.0 cr)
• JOUR 5552 - Law of Internet Communications (3.0 cr)
• LAW 3000 - Introduction to American Law and Legal Reasoning (3.0 cr)
• PHIL 3421W - Theories of Justice [WI] (3.0 cr)
• POL 3225 - American Political Thought [CIV] (3.0 cr)
• POL 3308 - Congressional Politics and Institutions [SOCS] (3.0 cr)
• POL 3309 - Justice in America (3.0 cr)
• POL 4403W - Constitutions, Democracy, and Rights: Comparative Perspectives [GP, WI] (3.0 cr)
• POL 4485 - Human Rights Policy: Issues and Actors [CIV] (3.0 cr)
• POL 4501W - The Supreme Court and Constitutional Interpretation [CIV, WI] (3.0 cr)
• POL 4502W - The Supreme Court, Civil Liberties, and Civil Rights [CIV, WI] (3.0 cr)
• SOC 4161 - Criminal Procedure in American Society (3.0 cr)
• SOC 4162 - Criminal Procedure in American Society (3.0 cr)
• SOC 3101 - Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
  or SOC 3101H - Honors: Sociological Perspectives on the Criminal Justice System [CIV] (3.0 cr)
• AAS 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
  or AFRO 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• AMIN 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans, & Chicanos in the U.S. (3.0 cr)
• CHIC 4231 - Color of Public Policy: African Americans, American Indians, Asian Americans & Chicanos in the U.S. (3.0 cr)
• JOUR 3776 - Mass Communication Law (3.0 cr)
Environmental Science

Required Courses

Complete 15 credits in the sub-plan. Six of the 15 credits must be taken at 3xxx or above. Other courses may be allowed, see departmental adviser for final consent.

Take 15 or more 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)
- **GEOG 1425** - Introduction to Weather and Climate [PHYS, ENV] (4.0 cr)
- **BIOI 1050** - Environmental Biology: Science and Solutions [ENV] (3.0 cr)
- **BIOI 1055** - Environmental Biology: Science and Solutions with Laboratory [BIOL, ENV] (4.0 cr)

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

- **BBE 4733** - Renewable Energy Technologies [TS] (3.0 cr)
- **CEGE 3501** - 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 [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)
- **ANSC 3203W** - Environment, Global Food Production, and the Citizen [GP, WI] (3.0 cr)
- **ESCI 3002** - Science and Politics of Global Warming [ENV] (3.0 cr)
- **ESCI 3402** - Science and Politics of Global Warming [ENV] (3.0 cr)
- **ESCI 3502** - Science and Politics of Global Warming (3.0 cr)
- **HSG 3482** - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
- **ESPM 3601** - Sustainable Housing--Community, Environment, and Technology [TS] (3.0 cr)
- **GEOG 1403** - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
- **GEOG 1403H** - Honors: Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
- **GLOS 3405** - Environment & Society: An Enduring Conflict [ENV] (3.0 cr)
- **HSCI 3244** - History of Ecology and Environmentalism [HIS, ENV] (3.0 cr)
- **HSCI 5244** - History of Ecology and Environmentalism (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 2016
• 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 B.S. in technical writing and communication or a minor in technical writing and communication, but not both.

Minor Courses
WRIT 3441 - Editing, Critique, and Style (3.0 cr)
WRIT 3562W - 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)

Upper-division Electives
Independent study and internship courses cannot be used to satisfy the WRIT 3xxx-5xxx elective requirement. Take 2 or more course(s) from the following:
• WRIT 3xxx
• WRIT 4xxx
• WRIT 5xxx
**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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 34 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.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. For a BA at least 18 of the 48 upper division credits must be outside of the major. For some specific majors, there are exceptions to this requirement.

This program requires 18 upper division credits outside the major. See your advisor for a list of courses that can or cannot be used to meet this requirement.

The theatre arts BA consists of 25 credits 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 4 of the following courses for a total of 12 credits.

- 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)

**Design/Technology & Theatre History**
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- TH 3571 - Introduction to Stage Technology (3.0 cr)
or 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 3559 - Introduction to Sound Design for the Theatre (3.0 cr)
or TH 3716 - Stage Management (4.0 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)

**Theatre Practicum**
At least one credit of TH 3100 must be a production (not performance) credit.
Take 2 or more course(s) totaling 2 or more credit(s) from the following:
- TH 3100 - Theatre Practicum (1.0 cr)

**Senior Project**
Students who double-major and choose to complete the senior project requirement in their other CLA major must complete two additional upper-division electives credits, in Theatre, to make up for not taking TH 4901.
- 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 2 courses totaling at least 6 credits to complete the subplan. 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 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 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)
• ID 3581 - HECUA: Arts for Social Change - Art and Culture in Political, Social, Historical Context [AH] (4.0 cr)
• ID 3582 - HECUA: Arts Praxis - Social Justice Theory and Practice in the Field [DSJ] (4.0 cr)
• ID 3583 - HECUA: Arts for Social Change Internship 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 5314 - Theatre Activities in Youthwork and Education (2.0 cr)
  or YOST 5314 - Theatre Activities in Youthwork and Education (2.0 cr)

History/Literature
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:
• 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 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 6 courses totaling at least 16 credits to complete the subplan, 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) 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 4550 - Video Technology (3.0 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)
• TH 5540 - Lighting Design for the Theatre (3.0 cr)
• TH 5545 - Stage Lighting Technology (3.0 cr)
• TH 5556 - Audio Engineering (3.0 cr)
• TH 5559 - Sound Design for Performance (3.0 cr)
• TH 5560 - Drawing, Rendering, and Painting for the Theatre Designer II (3.0 cr)
• TH 5570 - Properties/Scenery Technology (1.0 - 3.0 cr)
• TH 5580 - Costume Technology (3.0 cr)
• TH 5590 - Theatre Technology Practicum (1.0 - 3.0 cr)
• TH 5716 - Stage Management for the Theatre (4.0 cr)
• TH 5760 - Advanced Stage Management (2.0 - 3.0 cr)

Performance Creation
Take 9 courses totaling at least 15 credits including BA Mentoring and Creative Collaboration 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.

BA Mentoring
Take 4 or more course(s) totaling 4 or more credit(s) from the following:
• TH 3370 - BA Mentoring (1.0 cr)

Creative Collaboration
Take 2 or more 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)
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 2016
• 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 B.A. or a minor in Theatre Arts, but not both.

Minor Courses
Introductory Courses
TH 1101W - Introduction to the Theatre [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)

Upper-division Courses
Take 2 or more course(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)

Design/Technology
Take 2 or more course(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)
The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year
Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php

**Two honors courses**
Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)

**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

Sophomore Year
Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.

**Two honors courses**
Two honors courses (totalling at least six credits)

**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

Junior Year
Students engage in research, scholarship, or creative activity with a faculty mentor--an important step toward the development of a project for the honors thesis--while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.

**One honors course**

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Information current as of December 01, 2016
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
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 2016
- 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 alumnus of the program, there are many internship possibilities each term.

The program offers one-on-one advising and students come to know one another through shared classes and through the student group: Minnesota Urban Studies Student Association

Post graduation some students go on to graduate school in fields as diverse as social work, law, finance, geography, and medicine. Other students elect to spend their post-graduate year in a service based organization such as Teach for America, Peace Corps, Reading Corps, Americorps etc. The majority go on to get some on-the-job experience.

Urban studies gives students a breadth of knowledge and the knowledge of how to be engaged in urban issues often leading to long-term careers in public service.

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

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

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

Program Requirements
Students are required to take 4 semester(s) of any second language.

CLA BA degrees require 4 semesters or the equivalent of a second language.

CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level. Because of its interdisciplinary nature, this program is not held to the CLA requirement of 18 upper division credits outside the major.

Students may earn no more than one undergraduate degree in urban studies: a BA, a BS, or a minor.

All incoming CLA freshmen must complete the First Year Experience course sequence.
Major Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
• URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
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)
Take 6 or more credit(s) from the following:
• URBS 3500 - Urban Studies Workshop (3.0 cr)

Skills and Methods Courses
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)
• GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
• PA 5031 - Empirical Analysis I (4.0 cr)
• POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
• SOC 3801 - Sociological Research Methods [WI] (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)

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 3561 - Principles of Geographic Information Science (4.0 cr)
• GEOG 5511 - Principles of Cartography (3.0 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 4102 - Theory of Statistics II (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)

Applied Courses in Statistics & Quantitative Research Design
Take 0 or more course(s) from the following:
• CEGE 3101 - Computer Applications in Civil Engineering I (3.0 cr)
• GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
• HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research (4.0 cr)
• HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
• PA 5022 - Economics For Policy Analysis and Planning II (1.5 - 3.0 cr)
• PA 5271 - Geographic Information Systems: Applications in Planning and Policy Analysis (3.0 cr)

Other Methods Courses
Take 0 or more course(s) from the following:
• AFRO 5551 - Methods: Use of Oral Traditions as Resources for History (3.0 cr)
• GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
• GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
• GEOG 5401 - Geography of Environmental Systems and Global Change (4.0 cr)
• GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
• GEOG 5565 - Geographical Analysis of Human-Environment Systems (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)
• Communication Courses
  Take 0 - 1 course(s) from the following:
  • COMM 3411 - Introduction to Small Group Communication (3.0 cr)
  • COMM 3441 - Introduction to Organizational 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 1973 - Geography of the Twin Cities [SOCS] (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)
• GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
• HSG 2463 - Housing and Community Development (3.0 cr)
• HSG 4465 - Housing in a Global Perspective (3.0 cr)
• URB 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• URS 3871 - A Suburban World (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)

Internship and Senior Paper
Students planning to finish their degree requirements at the end of fall semester should take URB 3993 in place of URB 3955W.
Take 2 or more course(s) totaling 4 or more credit(s) from the following:
• URS 3900 - Urban Studies Internship Seminar (2.0 cr)
• URB 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:
• GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
• PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
• PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
• URB 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
• URB 3955W - Senior Paper Seminar [WI] (2.0 cr)
• WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)

Urban Studies Concentrations
Students are required to complete three courses for a minimum of 9 credits from one of the four concentration tracks.

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)
• 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)

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Information current as of December 01, 2016
• HIST 3822 - Making America Modern: 1945 to Present (3.0 cr)
• HIST 3869 - Urban American History: Race, Class, Gender, and Sexuality in Urban America (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 5321 - Dissident Sexualities in U.S. History (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 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)
• 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 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)

-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 3361W - Geography and Public Policy [WI] (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)
• LA 3514 - Making the Mississippi [CIV] (3.0 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 - 4.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• URBS 3871 - A Suburban World (3.0 cr)
• URBS 3861 - Financing Cities (3.0 cr)
• URBS 5861 - Financing Cities (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 (4.0 cr)
• ESPM 3011W - Ethics in Natural Resources [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 - Case Studies in Sustainable Landscape Planning and Design (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 (4.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5722 - Environmental and Resource Economics Policy (3.0 cr)
• SUST 4004 - Sustainable Communities (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 - Istanbul: 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)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 cr)
• GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3245 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (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)
• 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)
• 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)
• 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)
• 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 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
• or ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (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 2016
• 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
CLA degrees require students to complete 48 credits of upper division coursework taken at the 3xxx, 4xxx, or 5xxx level.

Students may earn no more than one undergraduate degree in urban studies: a BA, BS, or a minor.

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

Major Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
• URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
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)

Take 6 or more credit(s) from the following:
- URBS 3500 - Urban Studies Workshop (3.0 cr)

Skills and Methods Courses
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)
- GEOG 3531 - Numerical Spatial Analysis (4.0 cr)
- PA 5031 - Empirical Analysis I (4.0 cr)
- POL 3085 - Quantitative Analysis in Political Science [MATH] (4.0 cr)
- PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
- SOC 3801 - Sociological Research Methods [WI] (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)

**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 3561 - Principles of Geographic Information Science (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 4102 - Theory of Statistics II (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)

**Applied Courses in Statistics & Quantitative Research Design**
Take 0 or more course(s) from the following:
- CEGE 3101 - Computer Applications in Civil Engineering I (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- HIST 5011 - Measuring the Past: Quantitative Methods for Historical Research (4.0 cr)
- HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
- PA 5022 - Economics For Policy Analysis and Planning II (1.5 - 3.0 cr)
- PA 5271 - Geographic Information Systems: Applications in Planning and Policy Analysis (3.0 cr)

**Other Methods Courses**
Take 0 or more course(s) from the following:
- AFRO 5551 - Methods: Use of Oral Traditions as Resources for History (3.0 cr)
- GEOG 3401 - Geography of Environmental Systems and Global Change [ENV] (4.0 cr)
- GEOG 3523 - Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences (3.0 cr)
- GEOG 5401 - Geography of Environmental Systems and Global Change (4.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5565 - Geographical Analysis of Human-Environment Systems (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 CNES 3061 - "Bread and Circuses:” Spectacles and Mass Culture in Antiquity [HIS, CIV] (3.0 cr)
Urban Form and Society Courses

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

- DES 3331 - Street Life Urban Design Seminar (3.0 cr)
- GEOG 1973 - Geography of the Twin Cities [SOCS] (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)
- GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
- HSG 2463 - 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 3161W - Europe: A Geographic Perspective [GP] (3.0 cr)
- HIST 3479 - History of Chinese Cities and Urban Life (3.0 - 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)
- HIST 3869 - Urban American History: Race, Class, Gender, and Sexuality in Urban America (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 6601 - 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)

Internship and Senior Paper

Students planning to finish their degree requirements at the end of fall semester should take URBS 3993 in place of URBS 3955W.

Take 2 or more course(s) totaling 4 or more credit(s) from the following:

- URBS 3900 - Urban Studies Internship Seminar (2.0 cr)
- 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:

- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)
- PSY 3001V - Honors Introduction to Research Methods [WI] (4.0 cr)
- PSY 3001W - Introduction to Research Methods [WI] (4.0 cr)
- URBS 3301W - 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)

Urban Studies Concentrations

Students are required to complete three courses for a minimum of 9 credits from one of the four concentration tracks.

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 4276 - 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)
- 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)
- HIST 3869 - Urban American History: Race, Class, Gender, and Sexuality in Urban America (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 6601 - 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)
**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 - 4.0 cr)
- **POL 3739** - Politics of Race, Class, and Ethnicity (3.0 cr)
- **URBS 3771** - Fundamentals of Transit (3.0 cr)
- **URBS 3871** - A Suburban World (3.0 cr)
- **URBS 3861** - Financing Cities (3.0 cr)
  - or **URBS 5861** - Financing Cities (3.0 cr)
- **GEOG 3361W** - Geography and Public Policy [WI] (3.0 cr)
  - or **BSE 3361W** - Geography and Public Policy [WI] (3.0 cr)
- **LA 3514** - Making the Mississippi [CIV] (3.0 cr)
  - or **LA 5514** - Making the Mississippi (3.0 cr)

**Urban Infrastructure and Environment**

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 4571** - 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 (4.0 cr)
- **ESPM 3011W** - Ethics in Natural Resources [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 3303** - Case Studies in Sustainable Landscape Planning and Design (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 5252 - Transportation Policy, Planning, and Deployment (4.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5722 - Environmental and Resource Economics 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-

International Urban Issues
This is Track D.
Take 3 or more course(s) totaling 9 - 12 credit(s) from the following:
• ARCH 3722 - Istanbul: 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)
• GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
• GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 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)
• 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)
• 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)
• GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 cr)
  or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (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)
• HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
  or ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
• HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
  or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
Twin Cities Campus
Urban Studies Minor
CLA Dean's Office
College of Liberal Arts

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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 no more than one undergraduate degree in urban studies: a BA, a BS, or a minor.

Minor Courses
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- URBS 1001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
- URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
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)
Take 2 - 3 credit(s) from the following:
- URBS 3500 - Urban Studies Workshop (3.0 cr)
- URBS 3900 - Urban Studies Internship Seminar (2.0 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)
- 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)
• 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 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)

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)
• LA 3514 - Making the Mississippi [CIV] (3.0 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 - 4.0 cr)
• POL 3739 - Politics of Race, Class, and Ethnicity (3.0 cr)
• URBS 3771 - Fundamentals of Transit (3.0 cr)
• URBS 3871 - A Suburban World (3.0 cr)
• URBS 3861 - Financing Cities (3.0 cr)
or URBS 5861 - Financing Cities (3.0 cr)
or GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
or BSE 3361W - Geography and Public Policy [WI] (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 (4.0 cr)
• ESPM 3011W - Ethics in Natural Resources [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 - Case Studies in Sustainable Landscape Planning and Design (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 (4.0 cr)
• PA 5421 - Racial Inequality and Public Policy (3.0 cr)
• PA 5722 - Environmental and Resource Economics 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)

• International Urban Issues
  Take 0 - 6 credit(s) from the following:
  • ARCH 3722 - Istanbul: 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)
  • GLOS 3231 - Geography of the World Economy [SOCS, GP] (3.0 cr)
  • GLOS 3278 - Tigers and Dragons: The Rise of the East Asian Economies, 1930-Present (3.0 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)
  • 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)
  • 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)
  • GLOS 3145 - Global Modernity, the Nation-State, and Capitalism (4.0 cr)
    or GLOS 3145H - Honors: Global Modernity, the Nation-State, and Capitalism (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)
  • HIST 3066 - Prehistoric Pathways to World Civilization [HIS] (3.0 cr)
    or ANTH 3009 - Prehistoric Pathways to World Civilizations [HIS] (3.0 cr)
  • HIST 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
    or LAS 3402W - Modern Latin America 1825 to Present [HIS, GP, WI] (4.0 cr)
Twin Cities Campus

Aerospace Engineering and Mechanics B.A.E.M.

College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 1371</td>
<td>CSE Calculus I [MATH] (4.0 cr)</td>
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<tr>
<td>or MATH 1271</td>
<td>Calculus I [MATH] (4.0 cr)</td>
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<tr>
<td>MATH 1372</td>
<td>CSE Calculus II (4.0 cr)</td>
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<tr>
<td>or MATH 1272</td>
<td>Calculus II (4.0 cr)</td>
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<tr>
<td>MATH 2374</td>
<td>CSE Multivariable Calculus and Vector Analysis (4.0 cr)</td>
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<tr>
<td>or MATH 2263</td>
<td>Multivariable Calculus (4.0 cr)</td>
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Physics Core

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<tr>
<td>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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<tr>
<td>or PHYS 1501V</td>
<td>Honors Introduction to Mechanics [PHYS, WI] (4.0 cr)</td>
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<tr>
<td>PHYS 1302W</td>
<td>Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)</td>
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<tr>
<td>or PHYS 1402V</td>
<td>Honors Physics II [PHYS, WI] (4.0 cr)</td>
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<tr>
<td>or PHYS 1502V</td>
<td>Honors Introduction to Electricity and Magnetism [PHYS, WI] (4.0 cr)</td>
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Chemistry Core

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<tr>
<td>CHEM 1061</td>
<td>Chemical Principles I [PHYS] (3.0 cr)</td>
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<tr>
<td>CHEM 1065</td>
<td>Chemical Principles I 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>CHEM 1075H</td>
<td>Honors Chemistry I Laboratory [PHYS] (1.0 cr)</td>
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Statics Core

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<th>Credits</th>
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<tbody>
<tr>
<td>AEM 2011</td>
<td>Statics (3.0 cr)</td>
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</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
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
CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
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)
ME 3333 - Heat Transfer (3.0 cr)
MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
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)
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
PHYS 2503H - Honors Physics III (4.0 cr)
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
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)
• 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 4371 - Helicopter Aerodynamics (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 4391 - Independent Design Project (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)

Program Sub-plans
A sub-plan is not required for this program.
Twin Cities Campus
Astrophysics B.S. Astrop.
Astrophysics, Minnesota Institute for
College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 81 to 85
• 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 8 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Prior to declaring the major, it is strongly recommended that students complete at least one 2xxx level course required for the major.

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

Required prerequisites
Mathematics Core
Calculus I
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
MATH 1272 - Calculus II (4.0 cr)
or MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1572H - Honors Calculus II (4.0 cr)

Calculus III or IV
Both linear algebra and multivariable calculus are required to graduate from the program. Only one is required for admission to the program.

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 2573H - Honors Calculus III (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 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)
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)

Physics III
PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
or PHYS 2503H - Honors Physics III (4.0 cr)
or 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 (3.0 cr)

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

**Program Requirements**

**Core 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 4101 - Computational Methods in the Physical Sciences (4.0 cr)
- AST 5001 - Galactic Astronomy (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 2605 - Quantum Physics Laboratory (3.0 cr)
PHYS 4001 - Analytical Mechanics (4.0 cr)
PHYS 4002 - Electricity and Magnetism (4.0 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] (3.0 - 5.0 cr)

**Math Requirements**

Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 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)

**Linear Algebra or Multivariable Calculus**

Students must complete both linear algebra and multivariable calculus to graduate from this program. One of these courses must be taken prior to enrollment in the program.

**Linear Algebra**

- 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 2574H - Honors Calculus IV (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] (3.0 - 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)
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 4101** - Computational Methods in the Physical Sciences (4.0 cr)
- **AST 5001** - Galactic Astronomy (4.0 cr)
- **AST 5012** - The Interstellar Medium (4.0 cr)
- **AST 5022** - Relativity, Cosmology, and the Universe (4.0 cr)
- **AST 5201** - Methods of Experimental Astrophysics (4.0 cr)
- **PHYS 4041** - Computational Methods in the Physical Sciences (4.0 cr)
- **PHYS 4051** - Methods of Experimental Physics I (5.0 cr)
- **PHYS 4052W** - Methods of Experimental Physics II [WI] (5.0 cr)
- **PHYS 4101** - Quantum Mechanics (4.0 cr)
- **PHYS 4201** - Statistical and Thermal Physics (3.0 cr)
- **PHYS 4303** - Electrodynamics and Waves (3.0 cr)
- **PHYS 4611** - Introduction to Space Physics (3.0 cr)
- **PHYS 4621** - Introduction to Plasma Physics (3.0 cr)
- **MATH 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 5661** - 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)
- **PHYS 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)
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)

Technical Electives
Take 27 credits of technical electives approved by an advisor. A maximum of 10 credits of science courses and a maximum of 6 credits of research may be counted toward the total.

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 2263 - 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 2016
- 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
Honors math (MATH 1571H, 1572H, 2573H, 2574H) may be taken in place of the listed courses.

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
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 alg./diff eq. AND one multivar. calc.) to graduate:
- [MATH 2243 or MATH 2373]
- or [MATH 2263 or MATH 2374]

Biological and Physical Sciences
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- 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)
- CHEM 1075H - Honors Chemistry 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 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 minor requirements must be taken A-F (unless only offered S-N), and students must earn a grade of at least C- or better.

Common Core
BBE 1001 - Bioproducts and Biosystems Engineering Orientation (1.0 cr)
BBE 2002 - 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)
STAT 3021 - Introduction to Probability and Statistics (3.0 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)

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)
or MATH 2574H - Honors Calculus IV (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 4412W - Biocomposites and Biomass Energy [WI] (4.0 cr)
- BBE 4502W - BBE Capstone Design [WI] (4.0 cr)
- SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
- BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- CEGE 3402W - Civil Engineering Materials [WI] (3.0 cr)
- SSM 4407W - Sustainable Manufacturing Principles and Practices [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 I (1.0 cr)
- BBE 4403 - Bio-based Products Engineering Lab II (1.0 cr)
- BBE 4713 - Biological Process Engineering (3.0 cr)
- BBE 4401 - 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 credits (2 courses) from the Emphasis Electives group.
At least one course must be taken from the following: BBE 4404, BBE 4723, BBE 4733, CEGE 4502, IE 5513
Take 6 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 4404 - Biopolymers and Biocomposites Engineering (3.0 cr)
- BBE 4491 - Senior Topics: Independent Study (1.0 - 4.0 cr)
- SSM 4504W - Sustainable Products Systems Management [WI] (3.0 cr)
- BBE 4723 - Food Process Engineering (3.0 cr)
- BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)
- IE 5541 - Project Management (4.0 cr)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)

**Technical Electives**
Take 6 or more credit(s) from the following:
- BBE 3396 - Industry Assignment (1.0 cr)
- BBE 4900 - Intern Reports (2.0 cr)
- BBE 4608 - Environmental and Industrial Microbiology (3.0 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)
- MATS 3901 - Structural Characterization Lab (4.0 cr)
- ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)
- IE 5551 - Production Planning and Inventory Control (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)
- MATS 4214 - Polymers (3.0 cr)
  or CHEM 4214 - Polymers (3.0 cr)
  or CHEN 4214 - Polymers (3.0 cr)

**Food Engineering**

**Emphasis Courses**
- BBE 4402 - Bio-based Products Engineering Lab I (1.0 cr)
- BBE 4713 - Biological Process Engineering (3.0 cr)
- BBE 4723 - Food Process Engineering (3.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- BIOC 3021 - Biochemistry (3.0 cr)

**Emphasis Electives**
Select at least three courses out of the following course list.
Take 3 or more course(s) from the following:
- 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)
- CEGE 4502 - Water and Wastewater Treatment (3.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)
- IE 5541 - Project Management (4.0 cr)

**Technical Electives**
Select 9 credits from BBE 4401, BBE 4404, BBE 4533, BBE 4733, CEGE 4502, IE 5513, IE 5541 (if not taken above) and from the following list of courses. Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- BBE 3396 - Industry Assignment (1.0 cr)
- BBE 4900 - Intern Reports (2.0 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)
- FSCN 1102 - Food: Safety, Risks, and Technology [CIV] (3.0 cr)
- FSCN 1112 - Principles of Nutrition (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)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Lab (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

Select at least 9 credits of emphasis electives from the following list of courses. Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- CEGE 3202 - Surveying and 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 - Solid Hazardous Wastes (3.0 cr)
- CEGE 4562 - Environmental Remediation Technology (3.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)

Technical Electives

Select at least 9 credits, with at least one course chosen from BIOL 3007W, BIOL 3807, EEB 3001, or EEB 5601. Take 3 or more course(s) totaling 9 or more credit(s) from the following:

- BIOL 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- BIOL 3807 - Ecology (4.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
- EEB 5601 - Limnology (3.0 cr)
- BBE 3396 - Industry Assignment (1.0 cr)
- BBE 4900 - Intern Reports (2.0 cr)
- BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
- CEGE 3111 - CADD for Civil Engineers (2.0 cr)
- CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
- CEGE 5572 - Acara Social Venture Launchpad: Ideas to Impact (1.0 - 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)
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 2016
- 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 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.

All students admitted to the College of Science & Engineering as freshmen are required to enroll in CSE 1001 fall of their freshmen year.

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 1571H - Honors Calculus I [MATH] (4.0 cr)
MATH 1572H - Honors Calculus II (4.0 cr)
MATH 2573H - Honors Calculus III (4.0 cr)
MATH 2574H - Honors Calculus IV (4.0 cr)
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)
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)
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
Additional Mathematics
MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (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 2121 - Process Analytical Chemistry (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)
CHEM 2311 - Organic Lab (4.0 cr)
or CHEM 2312H - Honors Organic Lab (5.0 cr)
CHEM 3701 - Introduction to Biomolecular Engineering (3.0 cr)
CHEM 3006 - Mass Transport and Separation Processes (4.0 cr)
CHEM 3101 - Chemical Engineering Thermodynamics (4.0 cr)
CHEM 3102 - Reaction Kinetics and Reactor Engineering (4.0 cr)
CHEM 3201 - Numerical methods in ChEn applications (3.0 cr)
CHEM 4401W - Senior Chemical Engineering Lab [WI] (3.0 cr)
CHEM 4501W - Chemical Engineering Design I [WI] (3.0 cr)
CHEM 4502W - Chemical Engineering Design II [WI] (2.0 cr)
CHEM 4601 - Process Control (3.0 cr)
MATS 3011 - Introduction to Materials Science and Engineering (3.0 cr)
CHEM 3005 - Transport Phenomena: Momentum and Heat (4.0 cr)
CHEM 3401W - Junior Chemical Engineering Lab [WI] (2.0 cr)

Technical Electives
CHEM 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.
Take 9 or more credit(s) from the following:
• APEC 5721 - Economics of Science and Technology Policy (3.0 cr)
• 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)
• 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 5527 - Introduction to Modern Structural Biology (4.0 cr)
• BIOL 2005 - Animal Diversity Laboratory (2.0 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)
•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 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 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)
•NSCI 3101 - Introduction to Neurobiology I: Molecular, Cellular, 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)
•PHIL 3602 - Science, Technology, and Society (3.0 cr)
•PHER 3601 - Principles of Physiology (4.0 cr)
•PHER 5061 - Principles of Physiology for Biomedical Engineering (4.0 cr)
•PHYS 4911 - Introduction to Biopolymer Physics (3.0 cr)
•PUBH 6161 - Regulatory Toxicology (2.0 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)
• MATS 4511W - Corrosion and Electrochemistry of Corrosion [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 2016
• 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.

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)
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)
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)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For
more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 Math, Science, or Statistics
Students must take an additional course in math or statistics. If the student takes the honors math sequence, this requirement is automatically fulfilled.

- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- PHYS 2303 - Physics III: Physics of Matter (4.0 cr)
- STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

Major Courses

- CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
- CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)
- CHEM 4701 - Inorganic Chemistry (3.0 cr)
- CHEM 2101 - Introductory Analytical Chemistry Lecture (3.0 cr)
- CHEM 2111 - Introductory Analytical Chemistry Lab (2.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
    Lab can be taken concurrent with or after taking CHEM 2302
- CHEM 2311 - Organic Lab (4.0 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
- PHYS 2201 - Introductory Thermodynamics and Statistical Physics (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)

Upper Division Writing Intensive within the major

Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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. Principal fields within civil engineering are structural engineering, environmental engineering, water resources engineering, transportation engineering, and geotechnical engineering. The upper division civil engineering program requires students to take introductory courses in all of the above areas. In addition, students may emphasize a special interest in one of the areas by selecting appropriate technical electives in consultation with their advisor.

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.

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)

Physical Science and Mechanics
Mechanics
AEM 2011 - Statics (3.0 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)

Physics

Physics I
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

Program Requirements

Major Courses
CEGE 3101 - Computer Applications in Civil Engineering I (3.0 cr)
CEGE 3102 - Uncertainty and Decision Analysis in Civil Engineering (3.0 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 - Environmental Engineering [ENV] (3.0 cr)
CEGE 3502 - Fluid Mechanics (4.0 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)

Deformable Body 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 EE 2001 - Introduction to Circuits and Electronics (3.0 cr)
or MATS 2001 - Introduction to the Science of Engineering Materials (3.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or ME 3331 - Thermodynamics (3.0 cr)

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)

Electives
Although most civil engineers in practice need to be well versed in a number of specialty fields, some specialization (21 cr technical electives) is included in the B.C.E. degree program, as follows:
Take 21 or more credit(s) including exactly 2 sub-requirements(s) from the following:
Civil Engineering Technical Elective Courses
Students must take a minimum of 9 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 9 or more credit(s) from the following:
• CEGE 4xxx
• CEGE 5xxx

Technical Electives
The remainder of the 21 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 Civil Engineering) are acceptable as technical electives. Other courses not in the list can be used as technical electives with specific approval from a CEGE adviser. 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 - Orientation to Civil, Environmental, and Geo-Engineering (1.0 cr)
• CEGE 3111 - CADD for Civil Engineers (2.0 cr)
• CEGE 3202 - Surveying and 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 4092H - Honors Selected Reading (1.0 cr)
• CEGE 4094H - Senior Honors Thesis (2.0 cr)
• CEGE 4121 - Computer Applications in Civil Engineering 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 - 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 Design 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 - Solid Hazardous Wastes (3.0 cr)
• CEGE 4562 - Environmental Remediation Technology (3.0 cr)
• CEGE 4xxx
• CEGE 5094 - Civil Engineering Research (1.0 - 4.0 cr)
• CEGE 5190 - Special Topics (1.0 - 4.0 cr)
• CEGE 5211 - Traffic Engineering (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (4.0 cr)
• CEGE 5214 - Transportation Systems Analysis (4.0 cr)
• CEGE 5253 - Asphalt and Portland Cement Concrete Materials (4.0 cr)
• CEGE 5341 - Wave Methods for Nondestructive Testing (4.0 cr)
• CEGE 5351 - Advanced Mathematics for Civil Engineers (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 5561 - Air Quality Engineering (3.0 cr)
• CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 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] (3.0 cr)
• EEB 5601 - Limnology (3.0 cr)
• ESCI 3302W - 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 - Principles of Geophysical Exploration (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 (3.0 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 5713 - Tracers and Karst Hydrogeology (3.0 cr)
• ESCI 5xxx
• ESPM 3111 - Hydrology and Water Quality Field Methods (3.0 cr)
• ESPM 4216 - Contaminant Hydrology (3.0 cr)
• ESPM 4295W - GIS in Environmental Science and Management [WI] (4.0 cr)
• ESPM 5605 - Recycling: Extending Raw Materials Supplies (3.0 cr)
• FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
• GEOG 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 5112 - Introduction to Operations Research (3.0 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)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 2016
• 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 Adviser 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

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 4981W - 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 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 5626 - Fiber Optics Laboratory (1.0 cr)
• EE 5657 - Physical Principles of Thin Film Technology [WI] (4.0 cr)
• EE 5705 - Electric Drives in Sustainable Energy Systems (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 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 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)
- 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 Programmable Logic (4.0 cr)
- EE 5301 - VLSI Design Automation I (3.0 cr)
- EE 5302 - VLSI Design Automation II (3.0 cr)
- EE 5323 - VLSI Design I (3.0 cr)
- EE 5324 - VLSI Design II (3.0 cr)
- EE 5327 - VLSI Design Laboratory (3.0 cr)
- EE 5329 - VLSI Digital Signal Processing Systems (3.0 cr)
- EE 5333 - Analog Integrated Circuit Design (3.0 cr)

**Networks and Communication**
Take 0 or more course(s) from the following:
- EE 4501 - Communications Systems (3.0 cr)
- EE 5381 - Telecommunications Networks (3.0 cr)
- EE 5583 - Error Control Coding (3.0 cr)
- CSCI 4131 - Internet Programming (3.0 cr)
- CSCI 4211 - Introduction to Computer Networks (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)

**Systems and Software Design**
Take 0 or more course(s) from the following:
- 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 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 5421 - Advanced Algorithms and Data Structures (3.0 cr)
•CSCI 5451 - Introduction to Parallel Computing: Architectures, Algorithms, and Programming (3.0 cr)
•CSCI 5607 - Fundamentals of Computer Graphics I (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 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)

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 5421 - Introduction to Biomedical Optics (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 (3.0 cr)
•IE 5111 - Systems Engineering I (2.0 cr)
•IE 5112 - Introduction to Operations Research (3.0 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)
•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 2501 - Quantum Physics (4.0 cr)
•PHYS 2605 - Quantum Physics Laboratory (3.0 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 may 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 - Information Systems for Business Processes and Management (3.0 cr)
- MGMT 3001 - Fundamentals of Management (3.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
- MKTG 4001 - 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 - Introduction to Operations Management (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 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)
- EE 4043W - Industrial Assignment II [WI] (4.0 cr)
- EE 4161W - Energy Conversion and Storage [WI] (4.0 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)
- MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
- MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
- MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
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 2016
• 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
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
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 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)
STAT 3021 - Introduction to Probability and Statistics (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• CSCI 3081W - Program Design and Development [WI] (4.0 cr)
• CSCI 3921W - Social, Legal, and Ethical Issues in Computing [CIV, WI] (3.0 cr)
• CSCI 4511W - Introduction to Artificial Intelligence [WI] (4.0 cr)
• CSCI 4970W - Advanced Project Laboratory [WI] (3.0 cr)
• CSCI 5127W - Human-Centered Design and Prototyping of Ubiquitous Computing Systems [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.
Take 1 or more course(s) from the following:
• AEM 4601 - Instrumentation Laboratory (3.0 cr)
• AST 4101 - Computational Methods in the Physical Sciences (4.0 cr)
• BIOL 5272 - Applied Biostatistics (3.0 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)
• GDES 5341 - Interactive Design (3.0 cr)
• GDES 5342 - Advanced Web Design (3.0 cr)
• HSCI 4321 - History of Computing [TS, HIS] (3.0 cr)
• IDSC 4204W - Information Services Management [WI] (4.0 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 - 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 - Big Data Architecture (3.0 cr)
• KIN 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
• LING 5801 - Introduction to Computational Linguistics (3.0 cr)
• MATH 4xxx
• MATH 5xxx
• MICE 8992 - Discovering Patterns in the Microbiome (0.0 - 3.0 cr)
• PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
• PHYS 4051 - Methods of Experimental Physics I (5.0 cr)
• STAT 4xxx
• STAT 5xxx

**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 - Big Data Architecture (3.0 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's required courses meet the upper division math oriented. This track will require more track electives to reach the 23 credit minimum.

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 4101 - Computational Methods in the Physical Sciences (4.0 cr)
or PHYS 4041 - Computational Methods in the Physical Sciences (4.0 cr)
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)

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 1 (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 5609 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 1 (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 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
Take 2 or more course(s) from the following:
- CSCI 5117 - Developing the Interactive Web (3.0 cr)  
- CSCI 5127W - Human-Centered Design and Prototyping of Ubiquitous Computing Systems [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
Take 2 or more course(s) from the following:
- 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 - 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
Take 2 or more course(s) from the following:
- 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 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 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
A track is 23 credits minimum, split into three parts. Take four classes from the course list below, including the two required courses: CSCI 5106 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 5106 - Programming Languages (3.0 cr)
CSCI 5801 - Software Engineering I (3.0 cr)

SE/PL Sublist
Take 2 or more course(s) from the following:
•CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
•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 2 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 5321 - 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's required courses meet the upper division math oriented. This track will require more track electives to reach the 23 credit minimum.

CSCI 4011 - Formal Languages and Automata Theory (4.0 cr)
CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)

Theory Sublist
Take 2 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 2016
- 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
MATH 1271 - Calculus I [MATH] (4.0 cr)
or MATH 1371 - CSE Calculus I [MATH] (4.0 cr)

Chemistry
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)

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 1302W - Introductory Physics for Science and Engineering 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
Program Requirements

Mathematics
- MATH 1372 - CSE Calculus II (4.0 cr)
- MATH 1272 - Calculus II (4.0 cr)
- MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- MATH 2263 - Multivariable Calculus (4.0 cr)
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)

Chemistry
- 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)

Physics
- PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
- PHYS 1402V - Honors Physics II [PHYS, WI] (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)
  - 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 require.
  - 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 3006 - Grand Challenge: Climate Change - Myths, Mysteries, and Uncertainties [ENV] (3.0 cr)
    - GCC 5008 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
    - GCC 3004 - Grand Challenge: The Fracking Boom - Promises and Challenges of the Hydrocarbon Renaissance [ENV] (3.0 cr)
    - GCC 3008 - Grand Challenge: Policy and Science of Global Environmental Change [ENV] (3.0 cr)
    - SOIL 2125 - Basic Soil Science [PHYS, ENV] (4.0 cr)

Upper Division Requirements
- 25 additional upper division ESci credits, including ESci 2302, are required to complete the major. The six focus groups below are suggested 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:

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Information current as of December 01, 2016
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 (3.0 cr)
- ESCI 4701 - Geomorphology (4.0 cr)
- or ESCI 4703 - Glacial Geology (4.0 cr)

9-10 additional ESCI 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:
  - ESCI 4203 - Principles of Geophysical Exploration (3.0 cr)
  - ESCI 4204 - Geomagnetism and Paleomagnetism (3.0 cr)
  - ESCI 4212 - Solid Earth Geophysics II (3.0 cr)
  - ESCI 5203 - Mineral and Rock Physics (3.0 cr)
  - ESCI 5205 - Fluid Mechanics in Earth and Environmental Sciences (3.0 cr)

- Take 3 or more credit(s) from the following:
  - ESCI 4xxx
  - ESCI 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 ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)

14 additional ESCI credits at least 9 at 4xxx or 5xxx

-OR-

**Hydrogeology**

- ESCI 4602 - Sedimentology and Stratigraphy (3.0 cr)
- ESCI 4702 - General Hydrogeology (3.0 cr)
- ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
  - or ESCI 4701 - Geomorphology (4.0 cr)
  - or ESCI 4703 - Glacial Geology (4.0 cr)

15-16 additional ESCI credits with at least 9 credits at 4xxx or 5xxx

-OR-

**Geochemistry**

- ESCI 2302 - Petrology (3.0 cr)
- ESCI 4501 - Structural Geology (3.0 cr)
- ESCI 4801 - Geomicrobiology (3.0 cr)
- ESCI 5302 - Isotope Geology (3.0 cr)
- ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
  - or ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)

11 additional ESCI credits with at least 9 credits at 4xxx or 5xxx.
Environmental Geology
ESCI 4401 - Aqueous Environmental Geochemistry (3.0 cr)
ESCI 4402 - Biogeochemical Cycles in the Ocean (3.0 cr)
ESCI 4702 - General Hydrogeology (3.0 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 2016
• 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 Institute of Technology, involves courses in bioproducts and biosystems engineering; civil engineering; ecology, evolution, and behavior; environmental sciences, policy and management; forest resources; and geology.

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
BIOL 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 - 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 - Solid Hazardous Wastes (3.0 cr)
or CEGE 4562 - Environmental Remediation Technology (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)

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or EEB 4611 - Biogeochemical Processes (3.0 cr)
or EEB 5601 - Limnology (3.0 cr)
or ESPM 3101 - Conservation of Plant Biodiversity (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)
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 2016
- 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

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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>EE 4703</td>
<td>Electric Drives Laboratory (1.0 cr)</td>
</tr>
<tr>
<td>EE 4722</td>
<td>Power System Analysis Laboratory (1.0 cr)</td>
</tr>
<tr>
<td>EE 4743</td>
<td>Switch-Mode Power Electronics Laboratory (1.0 cr)</td>
</tr>
<tr>
<td>EE 4930</td>
<td>Special Topics in Electrical and Computer Engineering Laboratory (1.0 - 2.0 cr)</td>
</tr>
<tr>
<td>EE 5141</td>
<td>Introduction to Microsystem Technology (4.0 cr)</td>
</tr>
<tr>
<td>EE 5173</td>
<td>Basic Microelectronics Laboratory (1.0 cr)</td>
</tr>
<tr>
<td>EE 5327</td>
<td>VLSI Design Laboratory (3.0 cr)</td>
</tr>
<tr>
<td>EE 5545</td>
<td>Digital Signal Processing Design (3.0 cr)</td>
</tr>
<tr>
<td>EE 5613</td>
<td>RF/Microwave Circuit Design Laboratory (2.0 cr)</td>
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<tr>
<td>EE 5622</td>
<td>Physical Optics Laboratory (1.0 cr)</td>
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<tr>
<td>EE 5628</td>
<td>Fiber Optics Laboratory (1.0 cr)</td>
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<tr>
<td>EE 5657</td>
<td>Physical Principles of Thin Film Technology [WI] (4.0 cr)</td>
</tr>
<tr>
<td>EE 5707</td>
<td>Electric Drives in Sustainable Energy Systems Laboratory (1.0 cr)</td>
</tr>
</tbody>
</table>

**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 5381 - Telecommunications Networks (3.0 cr)
- EE 5501 - Digital Communication (3.0 cr)
- EE 5505 - Wireless Communication (3.0 cr)
- EE 5531 - Probability and Stochastic Processes (3.0 cr)
- EE 5542 - Adaptive Digital Signal Processing (3.0 cr)
- EE 5545 - Digital Signal Processing Design (3.0 cr)
- EE 5549 - Digital Signal Processing Structures for VLSI (3.0 cr)
- EE 5551 - Multiscale and Multirate Signal Processing (3.0 cr)
- EE 5561 - Image Processing and Applications (3.0 cr)
- EE 5581 - Information Theory and Coding (3.0 cr)
- EE 5583 - Error Control Coding (3.0 cr)
- EE 5585 - Data Compression (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)

### 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 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 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 - Introduction to Nanotechnology (4.0 cr)
- EE 5657 - Physical Principles of Thin Film Technology [WI] (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 5725 - Power Systems Engineering (3.0 cr)
- EE 5741 - Advanced Power Electronics (3.0 cr)
- EE 5745 - Wind Energy Essentials (2.0 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 5611 - Plasma-Aided Manufacturing (4.0 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 5629 - Optical System Design (2.0 cr)
- EE 5653 - Physical Principles of Magnetic Materials (3.0 cr)
- EE 5655 - Magnetic Recording (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 pre-requisite. 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 5421 - Introduction to Biomedical Optics (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 (3.0 cr)
- GCC 3011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
- GCC 5011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
- IE 5111 - Systems Engineering I (2.0 cr)
- IE 5112 - Introduction to Operations Research (3.0 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)
• 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 2605 - Quantum Physics Laboratory (3.0 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)
• HRIR 3021 - Human Resource Management and Industrial Relations (3.0 cr)
• IDSC 3001 - Information Systems for Business Processes and Management (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 - Introduction to Operations Management (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 Product Design, Interdisciplinary Design, Accounting, Biochemistry and Biology Minors among others.

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major; students must choose one course from the following list. Some of these courses may also fulfill other major requirements including additional writing intensive requirements. Take 0 - 1 course(s) from the following:
• EE 4043W - Industrial Assignment II [WI] (4.0 cr)
• EE 4161W - Energy Conversion and Storage [WI] (3.0 cr)
• EE 4389W - Introduction to Predictive Learning [WI] (3.0 cr)
• EE 4951W - Senior Design Project [WI] (4.0 cr)
• EE 4982V - Senior Honors Project II [WI] (2.0 cr)
• MATS 3851W - Materials Properties Lab [WI] (4.0 cr)
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
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 2016
• Required credits to graduate with this degree: 125
• Required credits within the major: 107 to 114
• Degree: Bachelor of Environmental Engineering

The environmental engineering program seeks innovative and sustainable solutions to air, and water-related problems in natural and built systems. 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 9 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 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)
MATH 2574H - Honors Calculus IV (4.0 cr)

Physical Science and Mechanics
Mechanics
AEM 2011 - Statics (3.0 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)

Chemical Principles II
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
or CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
or CHEM 1076H - Honors Chemistry II 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)

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Information current as of December 01, 2016
### BEnvE Requirements

**CHEM 2301** - 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

**Major Courses**

- **AEM 3031** - Deformable Body Mechanics (3.0 cr)
- **CEGE 3101** - Computer Applications in Civil Engineering I (3.0 cr)
- **CEGE 3102** - Uncertainty and Decision Analysis in Civil Engineering (3.0 cr)
- **CEGE 3301** - Soil Mechanics I (3.0 cr)
- **CEGE 3402W** - Civil Engineering Materials [WI] (3.0 cr)
- **CEGE 3501** - Environmental Engineering [ENV] (3.0 cr)
- **CEGE 3502** - Fluid Mechanics (4.0 cr)
- **CEGE 3541** - Environmental Engineering Laboratory (3.0 cr)
- **CEGE 4102W** - Capstone Design for Civil Engineering [WI] (4.0 cr)
- **CEGE 4501** - Hydrologic Design (4.0 cr)
- **CEGE 4502** - Water and Wastewater Treatment (3.0 cr)
- **CHEM 4501** - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
- **MATH 2373** - CSE Linear Algebra and Differential Equations (4.0 cr)

**ESCI**

Take any one ESCI course three credits or higher. ESCI 1007 and ESCI 4801 cannot be used to fulfill this requirement.

ESCI 3402, ESCI 3425, ESCI 4702 can be used to fulfill this requirement or the Water/Atmospheric Sciences/Sustainability/Policy selective elective requirement but not both.

- ESCI 1xxx
- or ESCI 2xxx
- or ESCI 3xxx
- or ESCI 4xxx
- or ESCI 5xxx

**Selected Electives**

Students should take 4 courses. Two courses from each category. Students may not use courses from the Selected Electives to also meet the Tech Electives requirements.

#### Chemistry/Ecology/Microbiology

Students must take 2 courses from this category.

- **CEGE 4562** - Environmental Remediation Technology (3.0 cr)
- or **CEGE 5541** - Environmental Water Chemistry (3.0 cr)
- or **EEB 3408W** - Ecology [WI] (3.0 cr)
- or **ESCI 3303W** - Geochemical Principles [WI] (4.0 cr)
- or **LAAS 3511** - Soil Chemistry and Mineralogy (3.0 cr)
- or **MICB 3301** - Biology of Microorganisms (5.0 cr)
- or **CEGE 4561** - Solid Hazardous Wastes (3.0 cr)
- or **BBE 4533** - Sustainable Waste Management Engineering (3.0 cr)
- or **CEGE 5551** - Environmental Microbiology (3.0 cr)
- or **ESCI 4801** - Geomicrobiology (3.0 cr)
- or **BBE 4608** - Environmental and Industrial Microbiology (3.0 cr)
- or **BIOL 4121** - Microbial Ecology and Applied Microbiology (3.0 cr)

#### Water/Atmospheric Sciences/Sustainability/Policy

Students must take 2 courses from this category.

ESCI 3402, ESCI 3425, ESCI 4702 can be used to fulfill this selective elective requirement or the ESCI requirement but not both.

- **BBE 4523** - Ecological Engineering Design (3.0 cr)
- or **BBE 4535** - Assessment and Diagnosis of Impaired Waters (3.0 cr)
- or **CEGE 4351** - Groundwater Mechanics (3.0 cr)
- or **CEGE 4512** - Open Channel Hydraulics (4.0 cr)
- or **CEGE 5511** - Urban Hydrology and Water Quality (4.0 cr)
- or **CEGE 5543** - Introductory Environmental Fluid Mechanics (4.0 cr)
- or **CEGE 5561** - Air Quality Engineering (3.0 cr)
or CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
or ESCI 3402 - Science and Politics of Global Warming [ENV] (3.0 cr)
or ESCI 3425 - Atmospheric Pollution: From Smog to Climate Change (3.0 cr)
or ESCI 4702 - General Hydrogeology (3.0 cr)
or PA 5022 - Economics For Policy Analysis and Planning II (1.5 - 3.0 cr)
or PA 5711 - Science, Technology & Environmental Policy (3.0 cr)
or WRS 5101 - Water Policy (3.0 cr)
or PA 5723 - Water Policy (3.0 cr)

Tech Electives
Take 12 or more credit(s) from the following:
• AEM 4xxx
  or AEM 5xxx
  or AST 4xxx
  or AST 5xxx
  or BBE 4xxx
  or BBE 5xxx
  or BMEN 4xxx
  or BMEN 5xxx
  or CEGE 3xxx
  or CEGE 4xxx
  or CEGE 5xxx
  or CHEM 4xxx
  or CHEM 5xxx
  or CHEN 4xxx
  or CHEN 5xxx
  or CMPE 4xxx
  or CMPE 5xxx
  or CSCI 4xxx
  or CSCI 5xxx
  or EE 4xxx
  or EE 5xxx
  or ESCI 4xxx
  or ESCI 5xxx
  or IE 4xxx
  or IE 5xxx
  or MATH 4xxx
  or MATH 5xxx
  or MATS 4xxx
  or MATS 5xxx
  or ME 4xxx
  or ME 5xxx
  or PHYS 4xxx
  or PHYS 5xxx
  or STAT 4xxx
  or 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:
• CEGE 3402W - Civil Engineering Materials [WI] (3.0 cr)
• CEGE 4102W - Capstone Design for Civil Engineering [WI] (4.0 cr)
• EEB 3408W - Ecology [WI] (3.0 cr)
• ESCI 3303W - Geochemical Principles [WI] (4.0 cr)

Biological Sciences relevant to the major
Students should take one 3 credit class or higher; it must include lab or field experience
AGRO 1101 - Biology of Plant Food Systems [BIOL] (4.0 cr)
or ANTH 1001 - Human Evolution [BIOL] (4.0 cr)
or BBE 4608 - Environmental and Industrial Microbiology (3.0 cr)
or 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 1009H - Honors: General Biology [BIOL] (4.0 cr)
or BIOL 1010 - 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
or BIOL 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
or BMEN 2501 - Cellular and Molecular Biology for Biomedical Engineers [BIOL] (4.0 cr)
or CEGE 5551 - Environmental Microbiology (3.0 cr)
or CI 1512 - Nature in the City [BIOL, ENV] (4.0 cr)
or EEB 3407 - Ecology (3.0 cr)
or EEB 3408W - Ecology [WI] (3.0 cr)
or ENT 1005 - Insect Biology [BIOL] (4.0 cr)
or ESCI 1007 - From Microbes to Mammoths: History of Life on Earth [BIOL] (4.0 cr)
or ESCI 4801 - Geomicrobiology (3.0 cr)
or GEOG 1403 - Biogeography of the Global Garden [BIOL, ENV] (4.0 cr)
or HECU 3593 - Environmental Sustainability Sci, Public Policy, & Cmty Action Field Research Method & Investigation [BIOL] (4.0 cr)
or HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
or MICB 3301 - Biology of Microorganisms (5.0 cr)
or NSCI 2100 - Human Neuroanatomy [BIOL] (4.0 cr)
or PLPA 1005 - Plants Get Sick Too [BIOL] (4.0 cr)
or VBS 1001 - Introduction to Biotechnology [BIOL, TS] (4.0 cr)
Twin Cities Campus
Geoengineering B.GeoE.
CSENG Civil, Envirn & Geo-Eng (CEGE)
College of Science and Engineering

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 125
- Required credits within the major: 104 to 107
- This program requires summer terms.
- Degree: Bachelor of Geoengineering

The mission of the geoengineering program comprises three overlapping and mutually supportive components:
Prepare students to become productive engineers and contributing members of their professional community.
Prepare students for continual learning and professional development.
Prepare students for formal advanced education.

The three objectives of our geoengineering program are that the graduates of the geoengineering program will:

1. practice technical proficiency and adaptability, and participate in life-long learning to meet the challenges facing the profession in civil engineering/geoengineering industries, government agencies, academia, or other careers;
2. exhibit strong communication, interpersonal, and management skills as leaders and team members in their profession;
3. realize their role as ethical professionals that protect and sustain human health, welfare, and the environment.

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
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)
MATH 2574H - Honors Calculus IV (4.0 cr)

Mechanics
AEM 2011 - Statics (3.0 cr)

Physical Sciences
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)
PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
PHYS 1302W - Introductory Physics for Science and Engineering II [PHYS, WI] (4.0 cr)
or PHYS 1402V - Honors Physics II [PHYS, WI] (4.0 cr)

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

Program Requirements
Earth Sciences
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)
ESCI 2302 - Petrology (3.0 cr)
or ESCI 2203 - Earth Surface Dynamics (4.0 cr)
Field Geology
ESCI 3911 - Introductory Field Geology (4.0 cr)
or ESCI 4971W - Field Hydrogeology [WI] (4.0 cr)
Engineering
AEM 3031 - Deformable Body Mechanics (3.0 cr)
CEGE 3101 - Computer Applications in Civil Engineering I (3.0 cr)
CEGE 3102 - Uncertainty and Decision Analysis in Civil Engineering (3.0 cr)
CEGE 3301 - Soil Mechanics I (3.0 cr)
CEGE 3501 - Environmental Engineering [ENV] (3.0 cr)
CEGE 3502 - Fluid Mechanics (4.0 cr)
CEGE 4104W - Capstone Design for Geoengineering [WI] (4.0 cr)
CEGE 4121 - Computer Applications in Civil Engineering II (3.0 cr)
CEGE 4311 - Rock Mechanics (4.0 cr)
CEGE 4351 - Groundwater 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)
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)
GeoE Technical Electives
Take 14 or more credit(s) including exactly 3 sub-requirements(s) from the following:
ESCI
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
•ESCI 4xxx
•ESCI 5xxx
•GeoE Core Electives
Take exactly 1 course(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)
•GeoE Technical Electives
Take 8 or more credit(s) from the following:
•AEM 4xxx
•AEM 5xxx
Upper Division Writing Intensive within the major

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

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

• CEGE 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 2016
- 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
Honors math (MATH 1571H, 1572H, 2573H) may be taken in place of the listed courses.
MATH 1372 & equivs
MATH 1372 - CSE Calculus II (4.0 cr)
or MATH 1272 - Calculus II (4.0 cr)
MATH 1371 & equivs
MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (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)

Physical Sciences
Honors physics (PHYS 1401V, 1402V) may be taken in place of the listed physics courses.
Chemistry
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
Physics
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)

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

Non-ISyE Required Courses
Honors math (MATH 2574H) may be taken in place of the listed math course.
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)

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 2016
- 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
Take exactly 2 course(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)

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 (3.0 - 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 5372 - Data Visualization for Interactive Platforms (3.0 cr)
- GDES 5383 - Digital Illustration and Animation (3.0 cr)
- GEOG 3561 - Principles of Geographic Information Science (4.0 cr)
- GEOG 5563 - Advanced Geographic Information Science (3.0 cr)
- GEOG 5564 - Urban Geographic Information Science and Analysis (3.0 cr)
- JOUR 3004W - Information for Mass Communication [WI] (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 2016
- Required credits to graduate with this degree: 124 to 125
- Required credits within the major: 103 to 104
- 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.

All students admitted to the College of Science and Engineering as freshmen are required to take CSE 1001 fall of their freshmen 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)
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)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (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
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)

Major Courses
AEM 2011 - Statics (3.0 cr)
AEM 3031 - Deformable Body Mechanics (3.0 cr)
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 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
MATS 4214 - Polymers (3.0 cr)
or CHEM 4214 - Polymers (3.0 cr)
or CHEN 4214 - Polymers (3.0 cr)

Technical Electives
Students must take 13 credits of technical electives.

The list below is not exhaustive; please see your adviser 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:
• BIOL 3011 - Biochemistry (3.0 cr)
• BMEN 5001 - Advanced Biomaterials (3.0 cr)
• CEGE 3402W - Civil Engineering Materials [WI] (3.0 cr)
• CEGE 3501 - Environmental Engineering [ENV] (3.0 cr)
• CEGE 3502 - Fluid Mechanics (4.0 cr)
• CEGE 4121 - Computer Applications in Civil Engineering II (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
• CHEM 2311 - Organic Lab (4.0 cr)
• CHEM 4201 - Materials Chemistry (3.0 cr)
• CHEM 4701 - Inorganic Chemistry (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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 73 to 93
- Degree: Bachelor of Science in Mathematics

The mission of the program is to provide high-quality mathematics instruction in a stimulating intellectual atmosphere. The goal is to educate students at all levels to provide cultural enrichment, to give them the analytic tools they need to become responsible citizens, and to prepare them for careers involving mathematics.

The School of Mathematics offers a program leading to the bachelor of science degree. The course of study is flexible and may be adapted to satisfy a wide variety of interests and needs. Students may prepare for graduate study in mathematics or emphasize various fields of interest, such as preparation for secondary school teaching, actuarial science, or programs in applied mathematics, including industrial mathematics, biology, mathematics applicable to computer science, and numerical analysis.

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

Admission Requirements
Students must complete 5 courses before admission to the program.

Freshman and transfer students students are usually admitted to pre-major status before admission to this major

Successful completion of five (5) courses is required for admission to upper division as a math major: three (3) calculus courses: Calculus I (1371/1271/1571H), Calculus II (1372/1272/1572H), and one 2xxx level Calculus course - either Linear Algebra & Differential Equations (2373/2243/2574H/3592H) or Multivariable Calculus (2374/2263/2573H/3593H) - plus two (2) Calculus-based Physics courses (see list below).

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

Required prerequisites
Calculus Sequence
CSE Calculus Sequence
Either MATH 2373 Linear Algebra & Differential Equations (here) or MATH 2374 Multivariable Calculus (see program requirements) can be taken to meet the requirement for admission to upper division.

Calculus I
- MATH 1371 - CSE Calculus I [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- or MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

Calculus II
- MATH 1372 - CSE Calculus II (4.0 cr)
- or MATH 1272 - Calculus II (4.0 cr)
- or MATH 1572H - Honors Calculus II (4.0 cr)

2xxx Level Calculus Course
- MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
- or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
- or MATH 2263 - Multivariable Calculus (4.0 cr)
- or 2xxx or 3xxx Level Honors Calculus Course
- MATH 2574H - Honors Calculus IV (4.0 cr)
- or MATH 3592H - Honors Mathematics I (5.0 cr)

Physics
- PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- or PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)
or PHYS 1501V - 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, 49xx and 59xx math courses neither satisfy upper division math course requirement nor the technical electives requirement.

In addition to the specializations described below, students who wish to pursue a pure mathematics track or are planning to go to graduate school in mathematics should consult their advisor about appropriate course choices.

Remaining Required Lower Division Calculus Courses
2xxx Level Calculus Course
MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or 2xxx or 3xxx Level Honors Calculus Course
MATH 2573H - Honors Calculus III (4.0 cr)
or MATH 3593H - Honors Mathematics II (5.0 cr)
Sequences, Series, & Foundations
MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
or MATH 2283 - Sequences, Series, and Foundations (3.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• MATH 3283W - Sequences, Series, and Foundations: Writing Intensive [WI] (4.0 cr)
• MATH 4067W - Actuarial Mathematics in Practice [WI] (3.0 cr)
• MATH 4997W - Senior project (Writing Intensive) [WI] (1.0 cr)

Specializations in Mathematics
Mathematics (No Specialization)
Students who do not choose one of the specializations must complete the basic mathematics major course requirements listed here.

For the technical electives requirement, students must take at least 6 credits of courses that meet the following criteria: prerequisite of calculus; 3xxx level or higher; courses form a coherent part of the student's program.

Algebra Requirement
Both courses can be from the theoretical algebra list.
Take 2 or more course(s) from the following:
Theoretical Algebra
Take 1 or more course(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• Applied Algebra
  Take 0 or more course(s) from the following:
  • MATH 4242 - Applied Linear Algebra (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 5485 - Introduction to Numerical Methods I (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 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)
  • STAT 5101 - Theory of Statistics I (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)

Mathematics Electives Requirement
  Courses from the algebra and analysis lists which have not already used to fulfill those requirements may be taken to fulfill the mathematics elective requirement.

4xxx/5xxx Level Mathematics Courses
  Take 4 or more course(s) from the following:
  • MATH 4xxx
  • MATH 5xxx

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.

Technical Electives Courses: Mathematics
  Complete 6 credits of technical elective courses at the 3xxx level or above which have Calculus I (1271/1371/1571H) as a prerequisite. Technical electives are selected by consultation with and approval of the math faculty advisor. Courses for this requirement must form a coherent part of a student's program.
  Take 2 or more course(s) totaling 6 or more credit(s) from the following:
  • MATH 4152 - Elementary Mathematical Logic (3.0 cr)
  • MATH 5165 - Mathematical Logic I (4.0 cr)
  • MATH 4567 - Applied Fourier Analysis (4.0 cr)
  • MATH 5467 - Introduction to the Mathematics of Image and Data Analysis (4.0 cr)
  • MATH 5345H - Honors: Introduction to Topology (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 5615H - Honors: Introduction to Analysis I (4.0 cr)
  • MATH 5616H - Honors: Introduction to Analysis 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 5583 - Complex Analysis (4.0 cr)
  • MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
  • MATH 5535 - Dynamical Systems and Chaos (4.0 cr)
  • MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
  • MATH 5486 - Introduction to Numerical Methods II (4.0 cr)

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• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
• MATH 5447 - Theoretical Neuroscience (4.0 cr)
• MATH 5378 - Differential Geometry (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 4653 - Elementary Probability (4.0 cr)
• 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)
• MATH 5711 - Linear Programming and Combinatorial Optimization (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 4603 - Advanced Calculus I (4.0 cr)
• MATH 4604 - Advanced Calculus II (4.0 cr)
• MATH 4512 - Differential Equations with Applications (3.0 cr)
• MATH 4242 - Applied Linear Algebra (4.0 cr)
• MATH 4428 - Mathematical Modeling (4.0 cr)
• MATH 4065 - Theory of Interest (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 5067 - Actuarial Mathematics I (4.0 cr)
• MATH 5068 - Actuarial Mathematics II (4.0 cr)

or Chemistry Technical Elective
CHEM 4501 - Introduction to Thermodynamics, Kinetics, and Statistical Mechanics (3.0 cr)
CHEM 4502 - Introduction to Quantum Mechanics and Spectroscopy (3.0 cr)

or Computer Science Technical Elective
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 5607 - Fundamentals of Computer Graphics I (3.0 cr)
• CSCI 5608 - Fundamentals of Computer Graphics II (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)

or Economics Technical Elective
ECON 3101 - Intermediate Microeconomics (4.0 cr)
ECON 3102 - Intermediate Macroeconomics (4.0 cr)
ECON 4261 - Introduction to Econometrics (4.0 cr)

or Physics Technical Elective
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 Statistics Technical Elective
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 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-

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, insurance, and finance. Thus, these required courses in economics and finance 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 Requirement
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 Requirement
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 Requirement
MATH 4065 - Theory of Interest (4.0 cr)
MATH 5067 - Actuarial Mathematics I (4.0 cr)
MATH 5068 - Actuarial Mathematics II (4.0 cr)

Additional Math Requirements for Actuarial Specialization
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 4xxx
•MATH 5xxx
•MATH 5075 - Mathematics of Options, Futures, and Derivative Securities I (4.0 cr)
•MATH 5485 - Introduction to Numerical Methods I (4.0 cr)
  or  4xxx or 5xxx Level Math Courses offered in Spring
  Take 1 or more course(s) from the following:
  •MATH 4xxx
  •MATH 5xxx
  •MATH 4428 - Mathematical Modeling (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)

Economics and Business
Introductory Economics
ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
ECON 1102 - Principles of Macroeconomics (4.0 cr)

Economics and Finance
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
ECON 3101 - Intermediate Microeconomics (4.0 cr)
ECON 4261 - Introduction to Econometrics (4.0 cr)
FINA 3001 - Finance Fundamentals (3.0 cr)

Insurance
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 5535 - Dynamical Systems and Chaos (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)
  •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 Requirement

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 5243 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5259H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5268H - 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)

Computer Applications Lower Division Requirements

Introduction to Computing and Programming Concepts

CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
or Introduction to Computer Programming
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)

Discrete Structures

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 5651 or STAT 5101 may be used to fulfill this requirement.

**Math 4653 - Elementary Probability (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 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)
- 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

**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**
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.

**Mathematical Biology: Genomics**
Note that some Genomics Elective choices have additional prerequisite courses.

**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
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)

Computer Science Requirements for Genomics
Introduction to Computing and Programming Concepts
CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
CSCI 1933 - Introduction to Algorithms and Data Structures (4.0 cr)
or Introduction to Computer Programming
CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development (4.0 cr)
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)

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, Biology Requirements
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).

1xxx Level Biology
BIOL 1009H may be substituted.
BIOL 1009 - General Biology [BIOL] (4.0 cr)

Genetics Requirement
GCD 3022 - Genetics (3.0 cr)

Genomics Elective Requirement
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.
MATH 5445 may be used to fulfill this requirement.
Take 1 or more course(s) from the following:
• EEB 5042 - Quantitative Genetics (3.0 cr)
• GCD 4143 - Human Genetics (3.0 cr)
• MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)

Plant Genomics
PBIO 5301 has additional prerequisite courses: CHEM 1061, CHEM 1065 (lab), CHEM 1062, CHEM 1066 (lab), CHEM 2301, BIOC 3021.
• PBIO 5301 - Plant Genomics (3.0 cr)

Molecular Biology of Cancer
GCD 4151 has additional prerequisite courses: CHEM 1061, CHEM 1065 (lab), CHEM 1062, CHEM 1066 (lab), CHEM 2301, BIOC 3021, BIOL 4003.
• GCD 4151 - Molecular Biology of Cancer (3.0 cr)
Mathematical Biology: Physiology

Note that some Physiology Elective choices have additional prerequisite courses.

Mathematics Requirements for MathBio: Physiology

Mathematical Modeling Requirement
MATH 4428 - Mathematical Modeling (4.0 cr)

Biological Networks or Neuroscience
MATH 5445 - Mathematical Analysis of Biological Networks (4.0 cr)
or MATH 5447 - Theoretical Neuroscience (4.0 cr)

Theoretical Algebra
Take 1 or more course(s) from the following:
• MATH 4281 - Introduction to Modern Algebra (4.0 cr)
• MATH 5248 - Cryptology and Number Theory (4.0 cr)
• MATH 5251 - Error-Correcting Codes, Finite Fields, Algebraic Curves (4.0 cr)
• MATH 5285H - Honors: Fundamental Structures of Algebra I (4.0 cr)
• MATH 5286H - Honors: Fundamental Structures of Algebra II (4.0 cr)
• MATH 5385 - Introduction to Computational Algebraic Geometry (4.0 cr)

Applied Algebra Requirement
MATH 4242 - Applied Linear Algebra (4.0 cr)

Analysis Requirements

Physiology Analysis Requirement
Take 1 or more course(s) from the following:
• MATH 5525 - Introduction to Ordinary Differential Equations (4.0 cr)
• MATH 5535 - Dynamical Systems and Chaos (4.0 cr)

Theory of Probability & Statistics
MATH 5561 - Basic Theory of Probability and Statistics (4.0 cr)
or STAT 5101 - Theory of Statistics I (4.0 cr)

Mathematics Electives
Mathematics courses from the algebra, analysis or required mathematics for physiology lists which were not used to fulfill those requirements may be used to fulfill this requirement.
Take 2 or more course(s) from the following:
• MATH 4xxx
• MATH 5xxx

Lower Division Computer Science Requirement
CSCI 1103 - Introduction to Computer Programming in Java (4.0 cr)
or CSCI 1113 - Introduction to C/C++ Programming for Scientists and Engineers (4.0 cr)
or CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)

Physiology, Biology, Chemistry Requirements

Physiology Requirement
PHSL 3061 - Principles of Physiology (4.0 cr)

1xxx Level Biology Requirement
BIOL 1009H may be substituted.
BIOL 1009 - General Biology [BIOL] (4.0 cr)

1xxx Level Chemistry Requirements
CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)
CHEM 1062 - Chemical Principles II [PHYS] (3.0 cr)
CHEM 1066 - Chemical Principles II Laboratory [PHYS] (1.0 cr)
or CHEM 1072H - Honors Chemistry II [PHYS] (3.0 cr)
CHEM 1076H - Honors Chemistry II Laboratory [PHYS] (1.0 cr)

Physiology Electives
Whichever course - Math 5445 or Math 5447 - was not taken to fulfill the mathematics requirement can be taken to fulfill this electives requirement.
Take 1 or more course(s) from the following:
• PHSL 4700 - Cell Physiology (3.0 cr)
• PHSL 5444 - Muscle (3.0 cr)
• NSC 5202 has additional prerequisite courses: CHEM 2301, BIOC 3021, NSCI 3101, NSCI 3102.
• NSC 5202 - Theoretical Neuroscience: Systems and Information Processing (3.0 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 2016
- 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 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)
- 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 3331 - Thermodynamics (3.0 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)

Electives
- ME 4131W - Thermal Environmental Engineering Laboratory [WI] (4.0 cr)
- ME 4231 - Motion Control Laboratory (4.0 cr)
- ME 4232 - Fluid Power Control Lab (4.0 cr)
- ME 4431 - Thermal Energy Engineering Laboratory (4.0 cr)
- ME 4431W - Energy Conversion Systems Laboratory [WI] (4.0 cr)

Technical Electives
Complete 15 credits of upper division technical electives, with at least 8 credits in ME. Students may choose options in power and propulsion, design and manufacturing, thermodynamics and heat transfer, environment, or select electives in consultation with their adviser.

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

Environmental
Take 0 or more credit(s) from the following:
- ME 5101 - Vapor Cycle Systems (4.0 cr)
- ME 5103 - Thermal Environmental Engineering (4.0 cr)
- ME 5105 - HVAC System Design (4.0 cr)
- ME 5113 - Aerosol/Particle Engineering (4.0 cr)
- ME 5116 - Cleanroom Technology and Particle Monitoring (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 Cycle Systems (4.0 cr)
•ME 5312 - Solar Thermal Technologies (4.0 cr)
•ME 5322 - 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 5465 - Energy-Resources, Technology and Society (4.0 cr)
•ME 5666 - Modern Thermodynamics (4.0 cr)

•ME EIP
Students in the ME EIP program are required to include the following courses in their technical electives:
•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)

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) 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. 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 88 to 92
- 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 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
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)

Physics III
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 (3.0 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 or IV
Calculus III or IV course is required for admission, but both courses are required to complete the program.
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 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 (48-52 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
Lower Division Core Physics Requirements
PHYS 2601 - Quantum Physics (4.0 cr)
PHYS 2605 - Quantum Physics Laboratory (3.0 cr)

Remaining Calculus III or IV Course
Calculus III or IV is required for admission to the program. Both courses are required to complete the program.
MATH 2243 - Linear Algebra and Differential Equations (4.0 cr)
or MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)
or MATH 2574H - Honors Calculus IV (4.0 cr)
or MATH 2263 - Multivariable Calculus (4.0 cr)
or MATH 2374 - CSE Multivariable Calculus and Vector Analysis (4.0 cr)
or MATH 2573H - Honors Calculus III (4.0 cr)

Upper Division Writing Intensive within the major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the 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 (50-52 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 specific courses are frequently approved for inclusion in a student's technical electives based on individual interests and goals.

Take 25 or more credit(s) from the following:

**Upper Level Math Elective**
Take 1 or more course(s) totaling 4 or more credit(s) from the following:

- **MATH 4242** - Applied Linear Algebra (4.0 cr)
- **MATH 4428** - Mathematical Modeling (4.0 cr)
- **MATH 4567** - Applied Fourier Analysis (4.0 cr)
- **MATH 5285H** - Honors: Fundamental Structures of Algebra I (4.0 cr)
- **MATH 5525** - Introduction to Ordinary Differential Equations (4.0 cr)
- **MATH 5583** - Complex Analysis (4.0 cr)
- **MATH 5587** - Elementary Partial Differential Equations I (4.0 cr)
- **MATH 5615H** - Honors: Introduction to Analysis I (4.0 cr)

**Upper Level Physics 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)
- **PHYS 5081** - Introduction to Biopolymer Physics (3.0 cr)

**Other Technical Electives**
Take 0 - 15 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)
- **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)
- **STAT 3011** - Introduction to Statistical Analysis [MATH] (4.0 cr)
- **STAT 3021** - Introduction to Probability and Statistics (3.0 cr)
- **MATH 5651** - Basic Theory of Probability and Statistics (4.0 cr)
- **IE 3521** - Statistics, Quality, and Reliability (4.0 cr)

**Biological**
Students who are interested in entering the biological sciences or medicine will find this sub-plan an attractive option. Physics applies to biology at all levels, from the basics of biosystems to biomedical engineering. This option can be very useful to students who want to pursue a career in biomedical industry. It also provides a strong foundation for students interested in pursuing an advanced degree in biophysics, molecular biology, physiology, medical physics, biomedical engineering, or medical school. Combined with the physics core curriculum this biological sub-plan gives students powerful tools to achieve their goals.

**Biological Sub-plan: Additional Programmatic Requirements (54 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 (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 adviser approval.

- **PHYS 4001** - Analytical Mechanics (4.0 cr)
- **PHYS 4002** - Electricity and Magnetism (4.0 cr)
- **PHYS 4101** - Quantum Mechanics (4.0 cr)
- **PHYS 4201** - Statistical and Thermal Physics (3.0 cr)

### Methods of Experimental Physics
- **PHYS 4051** - Methods of Experimental Physics I (5.0 cr)
- **PHYS 4052W** - Methods of Experimental Physics II [WI] (5.0 cr)

### Technical Electives
Technical electives include any mathematics, science, or engineering course of technical nature by departmental advisor approval. Only one course may be a directed research/study course. PHYS4911 is strongly recommended for students interested in biological physics. Students are encouraged to discuss options for technical electives with their departmental advisor, as specific courses are frequently approved for inclusion in a student's technical electives based on individual interests and goals. Take 11 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)
- **IE 3521** - Statistics, Quality, and Reliability (4.0 cr)

### Computational Sub-plan: Additional Programmatic Requirements (50-52 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 4101** - 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 specific courses are frequently approved for inclusion in a student’s technical electives based on individual interests and goals.
Take 15 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)
- CSCI 4041 - Algorithms and Data Structures (4.0 cr)
- CSCI 4061 - Introduction to Operating Systems (3.0 cr)
- CSCI 5304 - Computational Aspects of Matrix Theory (3.0 cr)
- CSCI 5523 - Introduction to Data Mining (3.0 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 4428 - Mathematical Methods for Physics (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)
- 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)

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 (55 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 - Revolutions in Science: Lavoisier, Darwin, and Einstein [HIS, GP] (3.0 - 4.0 cr)
General Psychology
Meets Lib Ed requirement of Social Sciences; therefore, credits do not count towards major.
Take 1 or more course(s) from the following:
- PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
Philosophical Foundations
Take 1 or more course(s) from the following:
- PHIL 1005 - Scientific Reasoning (4.0 cr)
- PHIL 3601W - Scientific Thought [WI] (4.0 cr)
Technical Electives
Technical electives include any math, science, or engineering course of technical nature by departmental advisor approval. Students
with the intent of continuing in physics graduate school are strongly encouraged to take PHYS 4001, 4002, 4101, and 4201. Only one course may be a directed research or directed study course. Students are encouraged to discuss options with their departmental advisor, as specific courses are frequently approved for inclusion based on individual interests and goals.

Take 26 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 3022** - Introduction to Cosmology (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)
  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)

**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 (50 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 adviser 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 math, 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 with their departmental advisor, as specific courses are frequently approved for inclusion based on individual interests and goals.
Take 25 or more credit(s) from the following:
• Technical Electives
Twin Cities Campus


College of Science and Engineering

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 54 to 60
• Degree: Bachelor of Science in Statistics

This program gives students an understanding of the theory of statistics, trains them in basic use of the most important types of statistical methods, and prepares them for graduate work or for jobs in such diverse areas as marketing analysis, quality management, and support for scientific research.

The program provides a broad foundation in statistics that can be combined with coursework in other technical disciplines or as a basis for further specialization in statistics.

Program Delivery

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

Admission Requirements

Students must complete 4 courses before admission to the program.

Freshman and transfer students 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)

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)

or 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)

Statistics

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

Mathematics

MATH 2373 - CSE Linear Algebra and Differential Equations (4.0 cr)

Major Courses

MATH 4242 - Applied Linear Algebra (4.0 cr)

or STAT 3022 - Data Analysis (4.0 cr)

or STAT 4893W - Consultation and Communication for Statisticians [WI] (3.0 cr)
Take one of the following pairs of courses.

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 STAT 5101 - Theory of Statistics I (4.0 cr)
MATH 5651 - Basic Theory of Probability and Statistics (4.0 cr)

Computer and Physical Sciences

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)

Students must complete 3 science courses with a lab component, chosen from at least 2 of the fields of physics, chemistry, biology.

Take 3 or more course(s) including 2 or more sub-requirements(s) from the following:

Take 0 - 1 course(s) from the following:
- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- BIOL 1009H - Honors: General Biology [BIOL] (4.0 cr)

Take 0 - 4 course(s) from the following:
- 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)

Take 0 - 2 course(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)
- 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)

Electives

Take 3 or more courses from the following

Take 3 or more course(s) from the following:
- STAT 5031 - Statistical Methods for Quality Improvement (4.0 cr)
- STAT 5041 - (inactive) (3.0 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)
- STAT 5511 - Time Series Analysis (3.0 cr)

Technical Electives

Students complete 10 credits of adviser-approved courses in computer science, biostatistics, industrial engineering, mathematics, or other areas.

Technical Elective

Upper-division Writing Intensive within the major

Students are required to take one upper-division Writing Intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
Twin Cities Campus

University Honors Program

College of Biological Sciences, College of Continuing Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
• Required credits to graduate with this degree: 14 to 44
• This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year
Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php

Two honors courses
Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)

Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Sophomore Year
Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.

Two honors courses
Two honors courses (totalling at least six credits)

Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Junior Year
Students engage in research, scholarship, or creative activity with a faculty mentor--an important step toward the development of a project for the honors thesis--while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.

One honors course
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 81 to 85
- Degree: Bachelor of Science in Business

Accounting is the process of gathering financial information and presenting it in a manner that will help users of that information make better decisions. Accountants are also frequently called upon to analyze financial information and provide important business advice. The terms and definitions that have emerged from the discipline are used widely. In fact, accounting is commonly described as the "language of business."

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 Microeconomics (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)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (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.

MKTG 3001 - Principles of Marketing (3.0 cr)
SOC 3001 - Introduction to Operations Management (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)

Additional Core Requirements

Information Systems

IDSC 3001 - Information Systems for Business Processes and Management (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)
ACCT 3150 - Role of the Accountant in Today's Finance Function (1.0 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 - Accounting Information Systems and IT Governance (2.0 cr)
• ACCT 5126 - Internal Auditing (2.0 cr)
• ACCT 5281 - Special Topics in Financial Reporting (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 2016
- 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 credits 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 5281 - Special Topics in Financial Reporting (2.0 cr)
- ACCT 5310 - International Accounting (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 2016
- 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. All advising is through the Undergraduate Program Office in the Carlson School of Management, room 2-190 Hanson Hall (lawminor@umn.edu; 612-624-3313). Undergraduates enrolled in graduate-level courses will be graded separately from graduate students.

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

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

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

Minor Requirements

Introduction
Note: undergraduates must complete Law 3000 with a grade of C or higher before enrolling in other Law School courses as part of the minor. Students should therefore plan ahead and complete this course as early as possible.
LAW 3000 - Introduction to American Law and Legal Reasoning (3.0 cr)

Business and Accounting Concepts
Students must take one (and only one) of the following business and accounting concepts courses.
FINA 3001 - Finance Fundamentals (3.0 cr)
or LAW 5076 - Essentials of Business for Lawyers (3.0 cr)
or MGMT 3001 - Fundamentals of Management (3.0 cr)
or MGMT 3004 - Business Strategy (3.0 cr)

Elective Courses
Students should complete their remaining credits from a selection of courses listed below. Please note that not all courses are offered each year, and students enrolled in Law School degree programs receive first preference in the registration process. Appropriate Law School courses not on the list below may be taken to fulfill minor requirements, with permission from the students advisor in the minor program. **Students are strongly encouraged to take LAW 3050.**
Take 9 or more credit(s) from the following:
- LAW 3050 - Law of Business Organizations (3.0 cr)
- BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
- LAW 5061 - Financial Regulation (3.0 cr)
- LAW 5062 - Energy Law (3.0 cr)
- LAW 5100 - Tax I (3.0 cr)
- LAW 5103 - Data Privacy Law (3.0 cr)
- LAW 5601 - International Business Transactions (3.0 cr)
- LAW 5606 - Administrative Law (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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 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)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (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.

- MKTG 3001 - Principles of Marketing (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)

Additional Core Requirements

Information Systems

- IDSC 3001 - Information Systems for Business Processes and Management (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)
- IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
- MGMT 4050 - Management of Innovation and Change (2.0 cr)
- IBUS 4050 - Management of Innovation and Change (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)

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 5201 - Intermediate Management Accounting (2.0 cr)
- ACCT 5160 - Financial Statement Analysis (2.0 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 for Business Systems Development (4.0 cr)
• INS 4100 - Corporate Risk Management (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)
• MGMT 4000 - Issues in Nonprofit Management (4.0 cr)
• MGMT 4040 - Negotiation Strategies (4.0 cr)
• MGMT 4100 - Topics in Management (2.0 - 4.0 cr)
• MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
• MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• SCO 3041 - Project Management (2.0 cr)
• SCO 3056 - Supply Chain Planning and Control (4.0 cr)
• BA 4503 - Carlson Ventures Enterprise (2.0 cr)
• ANTH 4121 - Business Anthropology (3.0 cr)
• PDES 2701 - Creative Design Methods (3.0 cr)
• PDES 3711 - Toy Product Design (4.0 cr)
• CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
• CEGE 5572 - Acara Social Venture Launchpad: Ideas to Impact (1.0 - 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:
• HRIR 4100W - HRIR Capstone: Personal and Organizational Leadership [WI] (4.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
• MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
• MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)
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 2016
• 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 B.S.B. 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 - Management of Innovation and Change (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)
or 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 5201 - Intermediate Management Accounting (2.0 cr)
• ACCT 5160 - Financial Statement Analysis (2.0 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 for Business Systems Development (4.0 cr)
• INS 4100 - Corporate Risk Management (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)
• SCO 3041 - Project Management (2.0 cr)
• SCO 3056 - Supply Chain Planning and Control (4.0 cr)
• MGMT 4000 - Issues in Nonprofit Management (4.0 cr)
• MGMT 4040 - Negotiation Strategies (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 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
• BA 4503 - Carlson Ventures Enterprise (2.0 cr)
• PDES 2701 - Creative Design Methods (3.0 cr)
• PDES 3711 - Toy Product Design (4.0 cr)
• CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
• CEGE 5572 - Acara Social Venture Launchpad: Ideas to Impact (1.0 - 2.0 cr)
• ANTH 4121 - Business Anthropology (3.0 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 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)
Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (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.

MKTG 3001 - Principles of Marketing (3.0 cr)
SCO 3001 - Introduction to Operations Management (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)

Additional Core Requirements

Information Systems

IDSC 3001 - Information Systems for Business Processes and Management (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)
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 - Topics in Finance (2.0 - 4.0 cr)
• HRIR 5654 - Public Policies on Employee Benefits: Social Safety Nets (2.0 cr)
• MATH 4065 - Theory of Interest (4.0 cr)
• MATH 5067 - Actuarial Mathematics I (4.0 cr)

International Experience
Students must complete an international experience as part of the program requirements. Short-term or semester-length programs may be used to meet this requirement. Students participate in International Experience (IE) 101 early in their program to begin planning.

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other major requirements.
Take 0 - 1 course(s) from the following:
• FINA 4242W - Corporate Investment Decisions [WI] (4.0 cr)
• MGMT 3033W - Business Communication [WI] (3.0 cr)
• IBUS 3033W - Business Communication in Spain [WI] (4.0 cr)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 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)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (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.
- MKTG 3001 - Principles of Marketing (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)

Additional Core Requirements

Information Systems
- IDSC 3001 - Information Systems for Business Processes and Management (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 - Topics in Finance (2.0 - 4.0 cr)
- ACCT 5160 - Financial Statement Analysis (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
Upper-division Writing Intensive within the major

Students are required to take one upper-division Writing Intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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
Curtis L. Carlson School of Management

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2016
- 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 - Topics in Finance (2.0 - 4.0 cr)
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)
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)

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (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.
- MKTG 3001 - Principles of Marketing (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)
Additional Core Requirements
Information Systems
- IDSC 3001 - Information Systems for Business Processes and Management (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 Human Resources and Industrial Relations (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 5654 - Public Policies on Employee Benefits: Social Safety Nets (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)

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 2016
- 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 B.S.B. 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 Human Resources and Industrial Relations (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 5654 - Public Policies on Employee Benefits: Social Safety Nets (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)
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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 72 to 86
- 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 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)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (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.

- MKTG 3001 - Principles of Marketing (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)

Additional Core Requirements

Information Systems

- IDSC 3001 - Information Systems for Business Processes and Management (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)

Major Courses

International Business Foundations

The international business foundations courses must be completed at the Carlson School.

- 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)
• IBUS 4471 - Information Systems and Innovation (4.0 cr)

International Environment Breadth
May be completed abroad with advising and department approval.
Take 2 or more course(s) totaling 6 or more credit(s) from the following:

International Political Economy Survey Course
Take 2 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)
• SOC 3417W - Global Institutions of Power: World Bank, International Monetary Fund, and World Trade Organization [GP, 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)
• GLOS 3602 - Other Worlds: Globalization and Culture (3.0 cr)
• GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 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)

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:
• 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] (4.0 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] (4.0 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)

International Business Environment Depth
May be completed abroad with advising and department approval. Courses may not count in more than one area of Depth, Breadth, or Business Foundations.
Students may choose to complete an upper division business language course for this category.
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)
• ANTH 3005W - Language, Culture, and Power [SOCS, DSJ, WI] (4.0 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)
• GEOG 3161 - Europe: A Geographic Perspective [GP] (3.0 cr)
• GLOS 3921 - Europe: A Geographic Perspective [GP] (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 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)
• HIST 3468 - Social Change in Modern China (3.0 cr)
• MM 3001W - Manufacturing in the Global Economy [WI] (3.0 cr)
• MM 4035 - Global Supply Chain Management (3.0 cr)
• OLPD 3380 - Developing Intercultural Competence (3.0 cr)
• PA 4414 - Child Human Rights: Work and Education (3.0 cr)
• POL 3477 - Political Economy of Development [SOCS, GP] (3.0 - 4.0 cr)
• POL 4481 - Governments and Markets (3.0 - 4.0 cr)
• PSY 3301 - Introduction to Cultural Psychology (3.0 cr)
• GCC 3001 - Grand Challenge: Can We Feed the World Without Destroying It? [ENV] (3.0 cr)
• GCC 3002 - Grand Challenge: Beyond War and Atrocity - Reconciliation and Justice [GP] (3.0 cr)
• GCC 5003 - Grand Challenge: Seeking Solutions to Global Health Issues [GP] (3.0 cr)
• GCC 5005 - Grand Challenge: Global Venture Design - What Impact Will You Make? [GP] (3.0 cr)

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 adviser 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:
• 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] (4.0 cr)
• GLOS 3701W - Population in an Interacting World [SOCS, GP, WI] (4.0 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)
• POL 3873W - Global Citizenship and International Ethics [CIV, WI] (3.0 cr)
• SPAN 3105W - Introduction to the Study of Hispanic Cultures [WI] (3.0 cr)

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

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Information current as of December 01, 2016
**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 2016
- 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 are usually admitted to pre-major status before admission to this major.

This minor is only available to students who are pursuing a BSB degree in the Carlson School of Management.

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

**Minor Requirements**

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 3060 - 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 4471 - Information Systems and Innovation (4.0 cr)
- MGMT 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** - Governments and Markets (3.0 - 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)

**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:

• **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] (4.0 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 4221** - Globalize This! Understanding Globalization Through Sociology [GP] (3.0 cr)
• **POL 3873W** - Global Citizenship and International Ethics [CIV, WI] (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)

**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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 to 80
- Degree: Bachelor of Science in Business

The Management Information Systems 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 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)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
- or ACCT 2050H - Honors: Introduction to Financial Reporting (4.0 cr)

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Information current as of December 01, 2016
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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

- 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.

- MKTG 3001 - Principles of Marketing (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)

Additional Core Requirements

Information Systems

- IDSC 3001 - Information Systems for Business Processes and Management (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 Communication

- MGMT 3033W - Business Communication [WI] (3.0 cr)
- 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 for Business Systems Development (4.0 cr)
- IDSC 4204W - Information Services Management [WI] (4.0 cr)
- IDSC 4301 - MIS in Action: A Capstone Course (2.0 cr)

Electives

Take 4 or more credit(s) from the following:

- IDSC 4104 - Aligning Enterprise Systems (SAP) to Business Processes (2.0 cr)
- IDSC 4401 - Information Security (2.0 cr)
- IDSC 4411 - Accounting Information Systems and IT Governance (2.0 cr)
- IDSC 4421 - Financial Information Systems and Technologies (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)
• IDSC 4491 - Independent Study in Information Systems (1.0 - 4.0 cr)
• IBUS 4471 - Information Systems and Innovation (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:
• IDSC 4204W - Information Services 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 2016
- Required credits in this minor: 15

See the major for a detailed description.

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

Admission Requirements
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

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

Required prerequisites
Information Systems
IDSC 3001 - Information Systems for Business Processes and Management (3.0 cr)
or IDSC 3001H - Honors: Information Systems for Business Processes and Management (3.0 cr)

Minor Requirements

Minor Requirements
IDSC 3202 - Analysis and Modeling for Business Systems Development (4.0 cr)

Electives
- 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 - Information Services Management [WI] (4.0 cr)
  - IDSC 4301 - MIS in Action: A Capstone Course (2.0 cr)
  - IDSC 4104 - Aligning Enterprise Systems (SAP) to Business Processes (2.0 cr)
  - IDSC 4401 - Information Security (2.0 cr)
  - IDSC 4411 - Accounting Information Systems and IT Governance (2.0 cr)
  - IDSC 4431 - Advanced Database Design (2.0 cr)
  - IDSC 4442 - 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)
  - IDSC 4491 - Independent Study in Information Systems (1.0 - 4.0 cr)
  - IBUS 4471 - Information Systems and Innovation (4.0 cr)
Twin Cities Campus
Management Minor
Curtis L. Carlson School of Management - Adm
Curtis L. Carlson School of Management

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2016
• Required credits in this minor: 16

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 an advisor-approved statistics course may be substituted for SCO 2550.

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)
• MKTG 3001 - Principles of Marketing (3.0 cr)
• SCO 3001 - Introduction to Operations Management (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 - Information Systems for Business Processes and Management (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)
Twin Cities Campus
Marketing B.S.B.
Curtis L. Carlson School of Management

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 78 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 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 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)
Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (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.
  - MKTG 3001 - Principles of Marketing (3.0 cr)
  - SCO 3001 - Introduction to Operations Management (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)

**Additional Core Requirements**

**Information Systems**
- IDSC 3001 - Information Systems for Business Processes and Management (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**
- MKTG 3010 - Marketing Research (4.0 cr)
- MKTG 3040 - Buyer Behavior (4.0 cr)
- MKTG 4080W - Marketing Strategy [WI] (4.0 cr)
  - Take 12 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 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 2016
- Required credits in this minor: 15

See major description for more information.

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

Admission Requirements
This minor is only available to students who are pursuing a BSB degree from the Carlson School of Management.

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

Required prerequisites
Principles of Marketing
MKTG 3001 - Principles of Marketing (3.0 cr)

Minor Requirements
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 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)
- IBUS 4082W - Brand Management [WI] (4.0 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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 75 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)

Statistics
SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
or ACCT 2050H - Honors: Introduction to Financial Reporting (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.
- MKTG 3001 - Principles of Marketing (3.0 cr)
- SCO 3001 - Introduction to Operations Management (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)

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 - Information Systems for Business Processes and Management (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 - Issues in Nonprofit Management (4.0 cr)
Nonprofit elective
Choose one course from the following list:
- PA 3002 - Basic Methods of Policy Analysis [SOCS] (3.0 cr)
  or PA 3990 - General Topics in Public Policy (1.0 - 3.0 cr)
  or PA 4144 - Social Entrepreneurship (3.0 cr)
  or PA 5123 - Philanthropy in America: History, Practice, and Trends (3.0 cr)

Business Elective
Take 8 or more credit(s) from the following:
- GCC 5003 - Grand Challenge: Seeking Solutions to Global Health Issues [GP] (3.0 cr)
- GCC 3011 - Grand Challenge: Pathways to Renewable Energy [TS] (3.0 cr)
- MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
or IBUS 3010 - Introduction to Global Entrepreneurship (4.0 cr)
• MGMT 4050 - Management of Innovation and Change (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 2016
- Required credits in this minor: 12

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 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 4242W - Corporate Investment Decisions [WI] (4.0 cr)
- FINA 4920 - Topics in Finance (2.0 - 4.0 cr)
- HRIR 5654 - Public Policies on Employee Benefits: Social Safety Nets (2.0 cr)
- MATH 4065 - Theory of Interest (4.0 cr)
- MATH 5067 - Actuarial Mathematics I (4.0 cr)
Twin Cities Campus
Supply Chain & Operations Management B.S.B.
Supply Chain & Operations
Curtis L. Carlson School of Management

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 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 conversion 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 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)

Statistics
- SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)

Accounting
- ACCT 2050 - Introduction to Financial Reporting (4.0 cr)
  or ACCT 2050H - Honors: Introduction to Financial Reporting (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 and 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.
- MKTG 3001 - Principles of Marketing (3.0 cr)
- MGMT 3004 - Business Strategy (3.0 cr)
- SCO 3001 - Introduction to Operations Management (3.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)
- FINA 3001H - Honors: Finance Fundamentals (3.0 cr)

Additional Core Requirements

Information Systems
- IDSC 3001 - Information Systems for Business Processes and Management (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 Communication
- MGMT 3033W - Business Communication [WI] (3.0 cr)
- 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 for Business Systems Development (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)
Twin Cities Campus
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 2016
- 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
This minor is only available to students pursuing the BSB degree in the Carlson School of Management.

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

Required prerequisites
Introduction to Operations Management
SCO 3001 - Introduction to Operations Management (3.0 cr)

Minor Requirements
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
University Honors Program
College of Biological Sciences, College of Continuing Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
Required credits to graduate with this degree: 14 to 44
This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

Freshman Year
• Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php
  Two honors courses
  Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)

Two other Honors Experiences
• Two other Honors Experiences (courses or non-course experiences)

Sophomore Year
• Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.
  Two honors courses
  Two honors courses (totalling at least six credits)

Two other Honors Experiences
• Two other Honors Experiences (courses or non-course experiences)

Junior Year
• Students engage in research, scholarship, or creative activity with a faculty mentor--an important step toward the development of a project for the honors thesis--while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.
  One honors course
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
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 2016
- Required credits to graduate with this degree: 125
- Required credits within the major: 116
- 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 cr)
  - or BIOL 2002H - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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)
- Psychology
  - PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
- Composition
  - WRIT 1301 - University Writing (4.0 cr)

Dental Hygiene Admissions Requirements: Spring (14 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)
- Microbiology
  - FSCN 2021 - Introductory Microbiology (4.0 cr)

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Dental Hygiene Admissions Requirements: Summer (7 cr.)

**Physiology**
- PHSL 3050 - Physiology From Cells to Systems (3.0 cr)
- or PHAR 3601 - Basic Human Physiology for the Health Professions (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 4310 - Foundations of Interprofessional, Professionalism, Communication, and Collaboration (1.0 cr)

**Term 2: Spring**
- DH 2212 - Communication for Oral Health Providers (2.0 cr)
- DH 2215 - Oral Histology and Embryology (2.0 cr)
- DH 2221 - Periodontology (2.0 cr)
- DH 2222 - Dental Hygiene Care Process Clinical Application II (3.0 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 3100 - Dental Professional Development I (1.0 cr)
- DH 3120 - 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 4100 - Dental Professional Development (2.0 cr)
- DH 4125W - Dental Hygiene Care Process: Clinical Application V [DSJ, WI] (6.0 cr)
- DH 4135W - Research Methods in Dental Hygiene [WI] (3.0 cr)
- DH 4136 - Periodontology III Lecture (1.0 cr)
- DH 4139 - Dental Public Health and Academic Service Learning II (2.0 cr)

**Term 6: Summer**
- DH 4234 - Leadership and Professional Development (2.0 cr)
- DH 4226 - Dental Hygiene Care Process Clinical Application VI (6.0 cr)

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

Take 0 - 1 course(s) from the following:
- DH 3224W - Dental Hygiene Care Process: Clinical Application IV [WI] (6.0 cr)
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 (2.0 cr)
- BIOC 2011 - Biochemistry for the Agricultural and Health Sciences (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 and BioC 2011 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 (2.0 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 (2.0 cr)
- DT 5410 - Applied Dental Biomaterials (1.0 cr)
- DT 5432 - Operative Dentistry I (2.0 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 5359 - Introduction to Outreach Experiences (0.0 cr)
- DT 5432 - Operative Dentistry I (2.0 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 5162 - Principles of Exodontia and Minor Oral Surgery (1.0 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.
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 5460 - Essentials of Clinical Care I For the Dental Therapist (10.0 cr)
DT 5600 - Dental Therapy Elective Regional Volunteer Experience (0.0 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 (0.0 - 1.0 cr)
DT 5141 - Clinical Pediatric Dentistry III (2.0 cr)
DT 5320 - Comprehensive Care Clinic (4.0 cr)
DT 5361 - Outreach Experiences II (2.0 cr)
DT 5443 - Operative Clinic III (4.0 cr)
Twin Cities Campus
Apparel Design B.S.
Design, Housing & Apparel
College of Design

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 81 to 88
• 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 3562W - Technical and Professional Writing [WI] (4.0 cr)
  or WRIT 3029W - Business and Professional Writing [WI] (3.0 cr)
  or ENGL 3027W - The Essay [WI] (4.0 cr)

Major Courses
- ADES 2213 - Textile Analysis (4.0 cr)
- ADES 2214 - Softlines Analysis (3.0 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 3224 - Apparel Design Studio IV (4.0 cr)
- ADES 3225 - Apparel Design Research (1.0 cr)
- ADES 3227 - Technical Design Studio (4.0 cr)
- ADES 4121 - History of Costume (4.0 cr)
- ADES 4196 - Internship in Apparel Design (1.0 - 4.0 cr)
- ADES 4215 - Product Development: Softlines (4.0 cr)
- ADES 4225 - Apparel Design Studio V (4.0 cr)
- DES 3201 - Career 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 RM 3196 - Field Study: National or International (1.0 - 4.0 cr)
  or ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
  or Fiber-based Split Rock course

Upper-division Writing Intensive within the major
Students are required to take one upper-division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 48
- Degree: Bachelor of Design in Architecture

The Bachelor of Design in Architecture (B.D.A.) program exposes students to a broad-based 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 architectural design to address a broad range of issues within architecture and as a bridge to other disciplines. 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, B.D.A. Primary Core
ARCH 3411W - Architectural History to 1750 [HIS, GP, WI] (3.0 cr)
ARCH 3412 - Architectural History Since 1750 [HIS, GP] (3.0 cr)

Design Core
Take a minimum of 12 credits but not more than 18.
Take 12 or more credit(s) from the following:
- ARCH 3250 - Design Workshop (1.0 - 6.0 cr)

**B.D.A. Secondary Core**

These courses provide introductions to curricular core areas within the school.
Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- ARCH 3511 - Material Transformations: Technology and Change in the Built Environment [TS] (3.0 cr)
- ARCH 3611 - Design in the Digital Age (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 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)

**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 B.D.A. 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 B.D.A. 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 B.D.A. coursework must be completed or in progress slated to be completed by the end of the semester. Eligibility to apply is based on B.D.A. GPA as well as overall GPA. The preferred B.D.A. GPA is 3.8 or higher.

Students with a GPA of 3.5 to 3.8 may apply but must also submit a G.R.E. 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 G.R.E.).
Twin Cities Campus
Architecture B.S.
School of Architecture
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- 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 B.S. 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 B.S. program is structured around five sequential semester-long design studios. Each one is a focused study in one of architectures core areas: material assemblies, the designed environment, program and typology, metropolitan design, and advanced design. Through hands-on making and complementary courses, students demonstrate how these core areas affect formal, spatial, and experiential qualities of architectural space.

B.S. 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 B.S. 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 B.S. degree program from within the College of Design after completing all required first-year courses. Admissions are highly competitive, with a portfolio requirement as part of the application process. Students in the B.S. 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 B.S. are well prepared to apply to the second year of the School of Architecture's Master of Architecture graduate program; Master 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)
or ARCH 3411V - 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)
ARCH 3711V - Honors: Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
or ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)

Courses to be completed prior to year three of the program
Calculus
MATH 1142 - Short Calculus [MATH] (4.0 cr)
or MATH 1271 - Calculus I [MATH] (4.0 cr)
Physics
PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
or PHYS 1201W - Introductory Physics for Biology and Pre-medicine I [PHYS, WI] (5.0 cr)
or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)

Architectural history elective
ARCH 4421W - Architecture and Interpretation: The Cave and the Light [WI] (3.0 cr)
or ARCH 4423 - Gothic Architecture (3.0 cr)
or ARCH 4424 - Renaissance Architecture (3.0 cr)
or ARCH 4425 - Baroque Architecture (3.0 cr)
or ARCH 4428 - Byzantium/Istanbul: Crossroads of East and West [HIS, GP] (3.0 cr)
or ARCH 4432 - Modern Architecture (3.0 cr)
or ARCH 4434 - Contemporary Architecture (3.0 cr)
or ARCH 4441 - Minnesota: Architecture and Landscapes (3.0 cr)
or Arch 44XX Architecture History

Architecture electives
Nine upper division architecture credits not used elsewhere.
Take exactly 9 credit(s) from the following:
• ARCH 3xxx
• ARCH 4xxx

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)

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Information current as of December 01, 2016
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 2016
• 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 2016
- 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 adviser. 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 Costume (4.0 cr)
- RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)

Choose two courses from this list

- RM 1201 - Fashion, Ethics, and Consumption [CIV] (3.0 cr)
- or ADES 2214 - Softlines Analysis (3.0 cr)
- or RM 2215 - Introduction to Retail Merchandising (3.0 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)
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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 81 to 89
• Degree: Bachelor of Fine Arts

The graphic design program educates students in design thinking, 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 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
DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
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)

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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)

**Business, Economics, or Marketing Courses**
Students must select one course in either business, economics, or marketing.

- ACCT 1xxx
  - or ACCT 2xxx
  - or ACCT 3xxx
  - or ACCT 4xxx
  - or ACCT 5xxx
- APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
- APEC 1102 - Principles of Macroeconomics (3.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
- ECON 1xxx
  - or ECON 2xxx
  - or ECON 3xxx
  - or ECON 4xxx
  - or ECON 5xxx
- MGMT 3xxx
- MKTG 3xxx

**Photography Courses**
- ARTS 1701 - Photography: Darkroom & Digital [AH] (4.0 cr)
  - or GDES 2361 - Design Process: Photography (3.0 cr)

**Major Courses**

**Basic Design Requirements**
- GDES 2342 - Web Design (3.0 cr)
- GDES 2345 - Typography (4.0 cr)

**Advanced Design Requirements**
- DES 3201 - Career and Internship Preparation for Design (1.0 cr)
- GDES 2399W - Design and its Discontents: Design, Society, Economy and Culture [WI] (3.0 cr)
- GDES 3312 - Color and Form in Surface Design (4.0 cr)
- GDES 3351 - Text and Image (3.0 cr)
- GDES 3352 - Identity and Symbols (3.0 cr)
- GDES 3353 - Packaging and Display (3.0 cr)
- GDES 4131W - History of Graphic Design [WI] (4.0 cr)
- GDES 4196 - Internship in Graphic Design (1.0 - 3.0 cr)
- GDES 4345 - Advanced Typography (4.0 cr)
- GDES 4361W - Thesis Studio and Writing [WI] (3.0 cr)
- GDES 4362 - Senior Thesis and Exhibition (3.0 cr)
- GDES 4363 - Graphic Design Portfolio (3.0 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 2350 - Design Material Topics (1.0 - 4.0 cr)
  - GDES 2361 - Design Process: Photography (3.0 cr)
  - GDES 3311 - Illustration (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 (1.0 - 4.0 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)
GDES 5399 - Theory of Electronic Design (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)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
• ENGL 3027W - The Essay [WI] (4.0 cr)
• GDES 4131W - History of Graphic Design [WI] (4.0 cr)
• GDES 4361W - Thesis Studio and Writing [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
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 2016
• 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; building systems and sustainability; 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 1461 - Introduction to Housing (3.0 cr)
HSG 2463 - Housing and Community Development (3.0 cr)
Take 3 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 3482 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
• HSG 5463 - Housing Policy (3.0 cr)
• HSG 4467W - Housing and the Social Environment [WI] (4.0 cr)
• HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
• HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
• HSG 5484 - Rural Housing Issues (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 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 68 to 80
- This program requires summer terms.
- Degree: Bachelor of Science

We are no longer accepting new students into this program.

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 2463 - 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)
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)
or HSG 5484 - Rural Housing Issues (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 4106 - 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 EPSY 3265 - 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)
HSG 4413 - A Systems Approach to Residential Construction (4.0 cr)
or BBE 4413 - Systems Approach to Residential Construction (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 [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)
• HSO 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)
- BLAW 3058 - The Law of Contracts and Agency (4.0 cr)
- HSG 4465 - Housing in a Global Perspective (3.0 cr)
- HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
- HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
- HSG 5484 - Rural Housing Issues (3.0 cr)
- FINA 3001 - Finance Fundamentals (3.0 cr)
- GEOG 5361 - Geography and Real Estate (4.0 cr)
- MGMT 3001 - Fundamentals of Management (3.0 cr)
- MGMT 4002 - Managerial Psychology (4.0 cr)
- MKTG 3001 - Principles of Marketing (3.0 cr)
- MKTG 3010 - Marketing Research (4.0 cr)
- MKTG 3040 - Buyer Behavior (4.0 cr)
- WRIT 4573W - Writing Proposals and Grant Management [WI] (3.0 cr)
- APEC 1101 - 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 ECON 1102 - Principles of Macroeconomics (4.0 cr)
- APEC 1251 - Principles of Accounting (3.0 cr)
  or ACCT 2050 - Introduction to Financial Reporting (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)

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, bi-sexual, 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 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)
- HSG 5484 - Rural Housing Issues (3.0 cr)
- FSOS 4154 - Families and Aging (3.0 cr)
- GERO 5105 - Multidisciplinary Perspectives on 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)
- SW 1001 - Introduction to the World of Social Work: A Global Perspective (3.0 cr)

or Selected Populations: low income, communities of color, and households with children
Take 20 or more credit(s) from the following:
- HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
- HSG 5484 - Rural Housing Issues (3.0 cr)
- 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 4106 - Family Resource Management (3.0 cr)
- FSOS 4153 - Family Financial Counseling (3.0 cr)
- FSOS 4156 - Legal-Economic Controversies in Families (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)

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.

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:

• AFEE 5361 - World Development Problems (3.0 cr)
• 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 - Environmental Engineering [ENV] (3.0 cr)
• CEGE 4561 - Solid Hazardous Wastes (3.0 cr)
• CEGE 5212 - Transportation Policy, Planning, and Deployment (4.0 cr)
• CEGE 5214 - Transportation Systems Analysis (4.0 cr)
• CHEN 5551 - Survey of Renewable Energy Technologies (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 [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 3006 - 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 - Environment and Development in the Third World [SOCS, ENV] (3.0 cr)
• HSCI 3244 - History of Ecology and Environmentalism [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 (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 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)
• URBS 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 BBE 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 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
or HSG 5481 - Promoting Independence in Housing and Community (3.0 cr)
or HSG 5484 - Rural Housing Issues (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.

HSG 5464 and 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.

HSG 5464 - Understanding Housing: Assessment and Analysis (3.0 cr)
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)
• HSG 5484 - Rural Housing Issues (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)
• 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 Intrdiscp Assoc Dean
College of Design

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2016
• 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 - 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 - 4 course(s) totaling 10 - 12 credit(s) from the following:

ADES 4121 - History of Costume (4.0 cr)

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Information current as of December 01, 2016
• ADES 4218W - Fashion, Design, and the Global Industry [WI] (3.0 cr)
• 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 3412 - Architectural History Since 1750 [HIS, GP] (3.0 cr)
• ARCH 3412H - Honors: Architectural History Since 1750 [HIS, GP] (3.0 cr)
• ARCH 3611 - Design in the Digital Age (3.0 cr)
• ARCH 3641 - Introduction to Heritage Preservation (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 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 4701V - Introduction to Urban Form and Theory [WI] (3.0 cr)
• BBE 4413 - Systems Approach to Residential Construction (4.0 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 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 4301 - Metaphor and Design (3.0 cr)
• DES 5160 - Topics in Design (1.0 - 4.0 cr)
• DES 5185 - Human Factors in Design (3.0 cr)
• EE 4951W - Senior Design Project [WI] (4.0 cr)
• EE 4981H - Senior Honors Project I (2.0 cr)
• EE 4982V - Senior Honors Project II [WI] (2.0 cr)
• GDES 2342 - Web Design (3.0 cr)
• GDES 2345 - Typography (4.0 cr)
• GDES 2350 - Design Material Topics (1.0 - 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 4311W - History of Graphic Design [WI] (4.0 cr)
• GDES 4330 - Surface Fabric Design Workshop (4.0 cr)
• GDES 4371 - Data Visualization Studio (3.0 cr)
• GDES 4345 - Advanced Typography (4.0 cr)
• GDES 4352 {Inactive} (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 5399 - Theory of Electronic Design (3.0 cr)
• HSG 3402 - Sustainable Housing: Community, Environment, and Technology [TS] (3.0 cr)
• HSG 4413 - A Systems Approach to Residential Construction (4.0 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)
• 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 (3.0 cr)
• LA 3002 - Informants of Creating Landscape Space (3.0 cr)
• LA 3003 - Case Studies in Sustainable Landscape Planning and Design (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 3170 - Topics in Product Design (1.0 - 4.0 cr)
• PDES 2701 - Creative Design Methods (3.0 cr)
• PDES 2702 - Concept Sketching (3.0 cr)
• PDES 3703 - Product Form and Model Making (4.0 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 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 5706 - Designing for Manufacture (4.0 cr)
• PDES 5711 - Toy Product Design (4.0 cr)
• RM 3243 - Visual Merchandising (3.0 cr)
• RM 4117W - Retail Environments and Human Behavior [WI] (3.0 cr)
• RM 4212W - Dress, Society, and Culture [WI] (3.0 cr)
Twin Cities Campus
Interior Design B.S.
Design, Housing & Apparel
College of Design

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 100
• 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.

DES 1101W - Introduction to Design Thinking [AH, WI] (4.0 cr)
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)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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
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)
ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 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 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)

Upper Division Writing Intensive within the Major
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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)
- IDES 4615W - Interior Design Research [WI] (3.0 cr)
- WRIT 3577W - Rhetoric, Technology, and the Internet [TS, 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 2016
- 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 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 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 77 to 83
• Degree: Bachelor of Environmental Design

Landscape design and planning focuses on creating 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 create integrative, collaborative, and beautiful designs for regions, communities, and sites to conserve ecosystems services and water and air resources, protect biodiversity, and to reduce dependence on fossil fuels.

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 (3.0 cr)
LA 3002 - Informants of Creating Landscape Space (3.0 cr)
LA 3003 - Case Studies in Sustainable Landscape Planning and Design (3.0 cr)
LA 4001 - Sustainable Landscape Design and Planning Practices (3.0 cr)
LA 4002 - Implementation of 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)
LA 2302 - Computer-Aided Representation for Environmental Design (3.0 cr)

Ecosystem Pattern and Process Core
ESPM 3108 - Ecology of Managed Systems [ENV] (3.0 cr)
HORT 1001 - Plant Propagation [BIOL] (4.0 cr)
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)
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)

Upper-division Writing Intensive within the major
Students are required to take one upper-division Writing Intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 3005W - Environmental Effects on Horticultural Crops [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
Students are required to complete one of the following sub-plans.

Accelerated Program
This sub-plan is optional and does not fulfill the sub-plan requirement for this program.

The accelerated 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 accelerated 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.

Accelerated 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 accelerated 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.

Landscape Design
The design track prepares students for a career in the design of sustainable landscapes at the residential and small-scale commercial level.

The landscape design track also requires students to take courses in biological science, plant materials, landscape management, and small business management.

Landscape Design--Ecosystem Pattern and Process
HORT 1015 - Woody and Herbaceous Plants (4.0 cr)
HORT 3005W - Environmental Effects on Horticultural Crops [WI] (4.0 cr)
HORT 4061W - Turfgrass Management [WI] (3.0 cr)
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)
CHEM 1015 - Introductory Chemistry: Lecture [PHYS] (3.0 cr)
CHEM 1017 - Introductory Chemistry: Laboratory [PHYS] (1.0 cr)

Landscape Design--Social and Cultural Systems
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
MGMT 3010 - Introduction to Entrepreneurship (4.0 cr)
Landscape Planning
The landscape planning track prepares students for work planning sustainable landscape at the urban and regional scale.

The landscape planning track requires additional courses in urban geography, urban and regional planning, natural resource planning and management, as well as biological and physical sciences. Students in this track should select GEOG 1502 to complete the mathematical thinking requirement.

Landscape Planning--Ecosystem Pattern and Process

- FNRM 3131 - Geographical Information Systems (GIS) for Natural Resources [TS] (4.0 cr)
- LA 3004 - Regional Environmental Landscape Planning (4.0 cr)
- LA 3514 - Making the Mississippi [CIV] (3.0 cr)
  or LA 5514 - Making the Mississippi (3.0 cr)

Take 2 or more course(s) from the following:
- BBE 3023 - Ecological Engineering Principles (3.0 cr)
- BBE 5513 - Watershed Engineering (3.0 cr)
- CEGR 3501 - Environmental Engineering [ENV] (3.0 cr)
- EEB 3563 - 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 - Conservation of Plant Biodiversity (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)
- PBOI 4321 - Minnesota Flora (3.0 cr)
- SOIL 5555 - Wetland Soils (3.0 cr)
- URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)

Landscape Planning--Social and Cultural Systems

- GEOG 3371W - Cities, Citizens, and Communities [DSJ, WI] (4.0 cr)

Take one course from the following:
- ARCH 4671 - Historic Preservation (3.0 cr)
  or ARCH 4701W - Introduction to Urban Form and Theory [WI] (3.0 cr)
  or DES 3331 - Street Life Urban Design Seminar (3.0 cr)
  or ESPM 3245 - Sustainable Land Use Planning and Policy [ENV] (3.0 cr)
  or FNRM 4501 - Urban Forest Management: Managing Greenspaces for People (3.0 cr)
  or GEOG 3361W - Geography and Public Policy [WI] (3.0 cr)
  or GEOG 3373 - Changing Form of the City [HIS, GP] (3.0 cr)
  or GEOG 3376 - Political Ecology of North America [ENV] (3.0 cr)
  or GEOG 3973 - Geography of the Twin Cities [SOCS] (3.0 cr)
  or GEOG 5393 - Rural Landscapes and Environments (4.0 cr)
  or PA 4200 - Urban and Regional Planning (3.0 cr)
  or PA 5013 - Law and Urban Land Use (1.5 cr)
  or PA 5211 - Land Use Planning (3.0 cr)
  or PA 5221 - Private Sector Development (3.0 cr)
  or PA 5251 - Strategic Planning and Management (3.0 cr)
  or PA 5253 - Designing Planning and Participation Processes (3.0 cr)
  or FNRM 4232W - Managing Recreational Lands [WI] (4.0 cr)
  or URBS 3001W - Introduction to Urban Studies: The Complexity of Metropolitan Life [WI] (3.0 cr)
  or URBS 3301W - American Cities As Settings for Cultural Diversity [WI] (3.0 cr)
  or URBS 3751 - Understanding the Urban Environment [ENV] (3.0 cr)
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 2016
- Required credits in this minor: 21

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 (3.0 cr)
LA 3003 - Case Studies in Sustainable Landscape Planning and Design (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:
- ARCH 3711W - Environmental Design and the Sociocultural Context [SOCS, CIV, WI] (3.0 cr)
- 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 2302 - Computer-Aided Representation for Environmental Design (3.0 cr)
- LA 2304 - Regional Environmental Landscape Planning (4.0 cr)
- LA 3002 - Informants of Creating Landscape Space (3.0 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 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)
- LA 4001 - Sustainable Landscape Design and Planning Practices (3.0 cr)
- LA 4002 - Implementation of 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)
Twin Cities Campus
Product Design B.S.
DHA Product Design
College of Design

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 79
- 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 (3.0 cr)
- PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
  - or PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
- 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 3703 - Product Form and Model Making (4.0 cr)
- PDES 3706 - Designing for Manufacture (4.0 cr)
- PDES 3711 - Toy Product Design (4.0 cr)
PDES 4701W - Capstone Research Studio [WI] (4.0 cr)
PDES 4702 - Capstone Design Studio (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 CSCI 1133 - Introduction to Computing and Programming Concepts (4.0 cr)
ANTH 4121 - Business Anthropology (3.0 cr)
  or ANTH 4035 - Ethnographic Research Methods (3.0 cr)
ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (4.0 cr)

Internships
Students perform two separate internships, one credit each term.
PDES 3196 - Product Design Internship (1.0 cr)
PDES 3704 - Computer-Aided Design Methods (3.0 cr)
  or PDES 5704 - Computer-Aided Design Methods (3.0 cr)

Electives
Take 3 - 4 course(s) totaling 9 - 12 credit(s) from the following:

  Interaction and Service
  ANTH 4035 - Ethnographic Research Methods (3.0 cr)
  or CSCI 4611 - Programming Interactive Computer Graphics and Games (3.0 cr)
  or DES 3309 - Storytelling and Design (3.0 cr)
  or DES 4301 - Metaphor and Design (3.0 cr)
  or DES 5185 - Human Factors in Design (3.0 cr)
  or GDES 2342 - Web Design (3.0 cr)
  or GDES 3353 - Packaging and Display (3.0 cr)
  or GDES 5341 - Interactive Design (3.0 cr)
  or GDES 5386 - Fundamentals of Game Design (3.0 cr)
  or HUMF 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
  or HUMF 5874 - Service Design: Designing complex systems to improve service delivery (4.0 cr)
  or PSY 3031 - Introduction to Sensation and Perception (3.0 cr)
  or SCO 3051 - Service Management (2.0 cr)
  or Entrepreneurship
  ANTH 4121 - Business Anthropology (3.0 cr)
  or MGMT 4008 - Entrepreneurial Management (4.0 cr)
  or MGMT 4050 - Management of Innovation and Change (2.0 cr)
  or MGMT 4080W - Applied Technology Entrepreneurship [WI] (4.0 cr)
  or MGMT 4170W - New Business Feasibility and Planning [WI] (4.0 cr)
  or MGMT 4171W - Entrepreneurship in Action I [WI] (4.0 cr)
  or MGMT 4172 - Entrepreneurship in Action II (4.0 cr)
  or Sustainability
  CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)
  or CEGE 5572 - Acara Social Venture Launchpad: Ideas to Impact (1.0 - 2.0 cr)
  or CEGE 5573 - Design for Sustainable Development: Create II (1.0 - 5.0 cr)
  or ESPM 3603 - Environmental Life Cycle Analysis (3.0 cr)
  or ESPM 3605 - Recycling: Extending Raw Materials [TS] (3.0 cr)
  or GCC 5005 - Grand Challenge: Global Venture Design - What Impact Will You Make? [GP] (3.0 cr)
  or MM 4311 - Sustainable Lean Manufacturing (2.0 cr)
  or Design as Craft
  ANTH 5221 - Anthropology of Material Culture (3.0 cr)
  or ARTS 1301 - Sculpture [AH] (4.0 cr)
  or ARTS 1801 - Ceramics [AH] (4.0 cr)
  or DES 3309 - Storytelling and Design (3.0 cr)
  or DES 3321 - Furniture Design: Exploration (3.0 cr)
  or DES 3341 - (un)Wrapping It Up: New Materials for Design, Design for New Materials (3.0 cr)
  or GDES 3353 - Packaging and Display (3.0 cr)
  or MM 3305 - 3D Printing and Additive Manufacturing (3.0 cr)
  or PDES 3705 - History and Future of Product Design (3.0 cr)
  or PDES 3715 - Design and Food (4.0 cr)
  or PDES 3704 - Computer-Aided Design Methods (3.0 cr)
  or PDES 5704 - Computer-Aided Design Methods (3.0 cr)
  or Marketing and Merchandising
  ADES 3217 - Fashion: Trends and Communication (3.0 cr)
  or ANTH 4035 - Ethnographic Research Methods (3.0 cr)
  or ANTH 4121 - Business Anthropology (3.0 cr)
  or ANTH 5221 - Anthropology of Material Culture (3.0 cr)
or DES 3309 - Storytelling and Design (3.0 cr)
or GDES 3353 - Packaging and Display (3.0 cr)
or MKTG 3001 - Principles of Marketing (3.0 cr)
or MKTG 3010 - Marketing Research (4.0 cr)
or MKTG 3040 - Buyer Behavior (4.0 cr)
or RM 2215 - Introduction to Retail Merchandising (3.0 cr)
or RM 3243 - Visual Merchandising (3.0 cr)
or Production
MM 3001W - Manufacturing in the Global Economy [WI] (3.0 cr)
or MM 4039 - Manufacturing Outsourcing Decisions (2.0 cr)
or MM 4201 - Quality Engineering and Process Improvement (3.0 cr)
or SCO 3001 - Introduction to Operations Management (3.0 cr)
or SCO 3061 - Lean Thinking (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:
• ANTH 1003W - Understanding Cultures [SOCS, GP, WI] (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)
• PDES 4701W - Capstone Research Studio [WI] (4.0 cr)
• PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
• PHYS 1102W - Introductory College Physics II [PHYS, WI] (4.0 cr)
• PHYS 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)
**Twin Cities Campus**

**Product Design Minor**

*Design, Housing & Apparel*

**College of Design**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- 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](https://www.umn.edu/admissions).

**Minor Requirements**

The product design minor requires a minimum of 16 credits.

**Required core**

- **PDES 2701 - Creative Design Methods (3.0 cr)**
  - or **PDES 5701 - Creativity, Idea Generation, and Innovation (3.0 cr)**
- **PDES 2702 - Concept Sketching (3.0 cr)**
  - or **PDES 5702 - Concept Sketching and Rendering (3.0 cr)**
- **PDES 3711 - Toy Product Design (4.0 cr)**
  - or **PDES 5711 - Toy Product Design (4.0 cr)**

Select from the following to reach 16 total credits for the minor.

- **ANTH 4121 - Business Anthropology (3.0 cr)**
- **CEGE 5571 - Acara Global Venture Design: Grand Challenges [GP] (3.0 - 4.0 cr)**
- **DES 3131 - User Experience in Design (4.0 cr)**
- **DES 3321 - Furniture Design: Exploration (3.0 cr)**
- **DES 5185 - Human Factors in Design (3.0 cr)**
- **EE 4951W - Senior Design Project [WI] (4.0 cr)**
- **ESPM 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 3170 - Topics in Product Design (1.0 - 4.0 cr)**
- **PDES 3703 - Product Form and Model Making (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 3715 - Design and Food (4.0 cr)**
- **PDES 4193 - Directed Study in Product Design (1.0 - 4.0 cr)**
- **PDES 5703 - Product Form and Model Making (4.0 cr)**
- **PDES 5704 - Computer-Aided Design Methods (3.0 cr)**
- **PDES 5705 - History and Future of Product Design (3.0 cr)**
- **PDES 5706 - Designing for Manufacture (4.0 cr)**
- **EE 4981H - Senior Honors Project I (2.0 cr)**
  - or **EE 4982V - Senior Honors Project II [WI] (2.0 cr)**
or ME 2011 - Introduction to Engineering (4.0 cr)
or ME 4054W - Design Projects [WI] (4.0 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 2016
- 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 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 ENGL 3027W - The Essay [WI] (4.0 cr)
- MGMT 1001 - Contemporary Management (3.0 cr)
  or MGMT 3001 - Fundamentals of 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 Costume (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)
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 2016
- 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)
University Honors Program

College of Biological Sciences, College of Continuing Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
- Required credits to graduate with this degree: 14 to 44
- This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

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

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

General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the [liberal education requirements](http://www.honors.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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

**Freshman Year**
Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: [http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php](http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php)

**Two honors courses**
Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)

**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

**Sophomore Year**
Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: [http://www.honors.umn.edu/experiences/non-course-experiences/index.php](http://www.honors.umn.edu/experiences/non-course-experiences/index.php)

**Two honors courses**
Two honors courses (totalling at least six credits)

**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

**Junior Year**
Students engage in research, scholarship, or creative activity with a faculty mentor--an important step toward the development of a project for the honors thesis--while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: [http://www.honors.umn.edu/latin-honors/thesis-guide/index.php](http://www.honors.umn.edu/latin-honors/thesis-guide/index.php)

**One honors course**
**Two other Honors Experiences**
Two other Honors Experiences (courses or non-course experiences)

**Senior Year**
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.

- **One honors course**
- **One additional Honors Experience**
- **The Honors Thesis**
Twin Cities Campus

Mortuary Science B.S.

Medical School - Adm

Medical School

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2016
• Required credits to graduate with this degree: 120
• Required credits within the major: 89 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 scores, 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 scores and rates, go to the Program of Mortuary Science office, A275-3 Mayo Memorial Building, 420 Delaware St. SE, Minneapolis, MN 55455 or 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 60 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 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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 (3.0 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 prior to being cleared for graduation and National Board Examination.

Junior Year Courses

Junior Year Fall Semester

- MORT 3014 - Funeral Service Rules and Regulations (2.0 cr)
- MORT 3021W - Funeral Service Psychology and Arrangements Theory [WI] (3.0 cr)
MORT 3171 - Human Anatomy Laboratory (2.0 cr)
MORT 3370 - Death and Dying Across Cultures and Religions (3.0 cr)
PHAR 1002 - Medical Terminology (2.0 cr)

**Junior Year Spring Semester**
MORT 3018 - History & Practice of Funeral Directing I: Antiquity - 1861 (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 3019 - History & Practice of Funeral Directing II: 1861 - Present (3.0 cr)
MORT 3022W - Funeral Service Arrangements Laboratory [WI] (3.0 cr)
MORT 3030 - Funeral Service Law (2.0 cr)
MORT 3379 - Clinical Funeral Service Rotation (1.0 - 6.0 cr)

**Senior Year Summer Courses**
Students are required to complete two clinical rotations totaling a minimum of 6 credits and no more than 12. 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
Nursing B.S.N.
School of Nursing

Program Type: Baccalaureate
Requirements for this program are current for Fall 2016
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.

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

Required prerequisites
Prerequisite Courses
Rochester students are also required to take BIOL 2331 Anatomy and Physiology I for 4cr and using the A-F grading basis. A minimum of 5 of the required prerequisite courses must be taken using the A-F grading basis.

FSCN 1112 - Principles of Nutrition (3.0 cr)
BIOL 1009 - General Biology [BIOL] (4.0 cr)
 or BIOL 1010 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
PSY 1001 - Introduction to Psychology [SOCS] (4.0 cr)
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)
NURS 2001 - Human Growth and Development: A Life Span Approach (3.0 cr)
 or FSOS 1201 - Human Development in Families: Lifespan [SOCS, DSJ] (4.0 cr)
 or Take exactly 2 course(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)

**Freshman Composition**

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**

**Major Requirements**

Rochester students take BIOL 2332 (Anatomy and Physiology II) for 4 cr using the A-F grading basis in lieu of PHSL 3051 (Human Physiology) and the human anatomy requirement. BIOL 2332 is only offered on Rochester campus.

PHSL 3051 (Human Physiology) and the human anatomy courses are only offered on Twin Cities campus.

- PHSL 3051 - Human Physiology (4.0 cr)
- NURS 3801 - Patient Centered Care of Adults and Older Adults I (3.0 cr)
- NURS 3703 - Assessment and Beginning Interventions: Nursing Lab 1 (3.0 cr)
- NURS 3806 - Nurse as Professional (2.0 cr)
- NURS 3803 - Application of Genetics in Nursing (2.0 cr)
- PHAR 3800 - Pharmacotherapy for the Health Professions (3.0 cr)
- NURS 3705 - Nursing Interventions (2.0 cr)
- NURS 4106 - Nurse as Collaborator (1.0 cr)
- NURS 4305 - Practicum: Community-based Care of Families Across Life Span (3.0 cr)
- NURS 4104 - Ethical Sensitivity and Reasoning in Health Care (2.0 cr)
- NURS 4312 - Patient Centered Care: Nursing Care of Families II (4.0 cr)
- NURS 4301 - Person Centered Care of Adults and Older Adults II (4.0 cr)
- NURS 3115 - Health Informatics and Information Technology [TS] (3.0 cr)
- NURS 4321 - Public Health Nursing (2.0 cr)
- NURS 4303 - Practicum: Person Centered Care of Adults in Acute Care (3.0 cr)
- NURS 4703 - Specialty Focused Practicum I (4.0 cr)
- NURS 4705 - Specialty Focused Practicum II (6.0 cr)
- NURS 4402 - Taking Ethical Action in Health Care [CIV] (1.0 cr)
- NURS 3802 - Patient Centered Care: Nursing Care of Families I (3.0 cr)
- NURS 4707 - Nursing Leadership: Professional Practice in Complex Systems (2.0 cr)
- NURS 5010 - Foundations of Interprofessional Communication and Collaboration (1.0 cr)
- NURS 4704 - Continuum of Care Practicum (2.0 cr)
- NURS 4706 - Transition to Practice (1.0 cr)
- NURS 3710 - Statistics for Clinical Practice and Research [MATH] (3.0 cr)
- or STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or EPSY 3264 - Basic and Applied Statistics [MATH] (3.0 cr)
- or SCO 2550 - Business Statistics: Data Sources, Presentation, and Analysis (4.0 cr)
- or SOC 3811 - Social Statistics [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)
- or PSY 3801 - Introduction to Psychological Measurement and Data Analysis [MATH] (4.0 cr)

These courses are offered on Twin Cities Campus only. Rochester students, please see note above.

- ANAT 3001 - Human Anatomy (3.0 cr)
- or ANAT 3611 - Principles of Human Anatomy (3.0 cr)
- or ANAT 3601 - Principles of Human Anatomy (3.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- or MCB 3301 - Biology of Microorganisms (5.0 cr)
- NURS 4205V - Honors: Nursing Theory and Research [WI] (3.0 cr)
- or NURS 4205W - Nursing Theory and Research [WI] (3.0 cr)
- NURS 4404V - Honors: Applied Research and Research Utilization [WI] (3.0 cr)
- or NURS 4777W - Senior Project in the Nursing Major [WI] (3.0 cr)

**Upper Division Writing Intensive within the major**

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Information current as of December 01, 2016
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose 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 4205V - Honors: Nursing Theory and Research [WI] (3.0 cr)
• NURS 4205W - Nursing Theory and Research [WI] (3.0 cr)
• NURS 4404V - Honors: Applied Research and Research Utilization [WI] (3.0 cr)
• NURS 4777W - Senior Project in the Nursing Major [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**

**University Honors Program**

**College of Biological Sciences, College of Continuing Education, College of Design, College of Education and Human Development, College of Food, Agricultural and Natural Resource Sciences, College of Liberal Arts, 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 2016
- Required credits to graduate with this degree: 14 to 44
- This program is 8 terms (4 years) long.

The University Honors Program (UHP) assists high-achieving students in making the most of their undergraduate education. Our students are driven to excel both inside and outside the classroom, but we challenge them to go one step further.

**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 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 complete a set number of Honors Experiences per year (May and summer sessions included).

**Freshman Year**

Students build a solid foundation of knowledge to serve them throughout their undergraduate career. Most students complete first-year Honors Experiences primarily through honors courses. Courses can be found here: http://www.honors.umn.edu/experiences/courses-and-tutoring/index.php

- **Two honors courses**
  - Two honors courses (honors seminars, departmental honors courses, or freshman seminars totalling at least six credits)

- **Two other Honors Experiences**
  - Two other Honors Experiences (courses or non-course experiences)

**Sophomore Year**

Students continue to take advantage of the curriculum while expanding their education beyond the classroom. Through non-course Honors Experiences they begin to apply their knowledge in the laboratory, studio, or community. Examples of these experiences can be found here: http://www.honors.umn.edu/experiences/non-course-experiences/index.php.

- **Two honors courses**
  - Two honors courses (totalling at least six credits)

- **Two other Honors Experiences**
  - Two other Honors Experiences (courses or non-course experiences)

**Junior Year**

Students engage in research, scholarship, or creative activity with a faculty mentor—an important step toward the development of a project for the honors thesis—while deepening and broadening their knowledge and skill base. The honors thesis guide can be found here: http://www.honors.umn.edu/latin-honors/thesis-guide/index.php.

- **One honors course**
Two other Honors Experiences
Two other Honors Experiences (courses or non-course experiences)

Senior Year
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.

One honors course
One additional Honors Experience
The Honors Thesis
Twin Cities Campus
Medical Laboratory Sciences B.S.
Allied-Medical Technology
Academic Health Center Shared

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 58
- This program is 9 terms (4 1/2 years) long.
- This program requires summer terms.
- We have two performance sites - Twin Cities and Rochester until spring 2017.
- Degree: Bachelor of Science

The medical laboratory sciences BS 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 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 must take one statistics course and either pre-calculus or calculus

- MATH 1142 - Short Calculus [MATH] (4.0 cr)
- or MATH 1271 - Calculus I [MATH] (4.0 cr)
- STAT 3011 - Introduction to Statistical Analysis [MATH] (4.0 cr)
- or 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)
- or BIOL 2002 - Foundations of Biology for Biological Sciences Majors, Part I [BIOL] (6.0 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
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.

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 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 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 two upper division writing intensive courses within the major. Some of these courses may also fulfill other major 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.

Rochester
The medical laboratory sciences 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.

Prerequisites are the same for both performance locations.

Course Group 0
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 2016
- Required credits to graduate with this degree: 38
- This program requires summer terms.
- Degree: Medical Laboratory Science Certificate

The Medical Laboratory Sciences Certificate program consists of 2-3 semesters of professional program courses and 1 semester of clinical practicum. Students from academic affiliate schools or those who already have a baccalaureate degree can apply for admission directly into the final professional year after completion of the prerequisites and the upper division science requirements. Admission is 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)
General Requirements
All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements. Required courses for the major or minor in which a 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 5113 - 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.

Minnesota State University, Mankato (Affiliate Campus)
Existing program.

St. Cloud State University
Existing program.

University of Wisconsin - River Falls
Existing program.