This document serves as an official historical record for a specific period in time. The information found is subject to change without notice. Colleges and departments make changes to their degree requirements and course descriptions frequently. More information is available at catalogs.umn.edu.

For current information, refer to:

- Program search: z.umn.edu/publicprogramsearch
- Course search: z.umn.edu/publiccoursecatalog
- University policies: policy.umn.edu
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Crookston Campus

Accounting B.S.

Business

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 63
- Degree: Bachelor of Science

Accounting is an information system that represents the economic resources and responsibilities of business or non-business enterprises. Monitored over time, it is used as a decision-making tool for allocating resources and evaluating responsibilities.

Accounting information affects major economic decisions that have national and international impact. The accounting program teaches analytical, theoretical, communication, and leadership skills necessary for effective accounting and advancement in public, private, and government careers.

The program prepares students to become accountants in business and government by providing accounting, business, and liberal education courses.

Program outcomes:
- Use computer technology for accounting spreadsheet applications and general ledger accounting functions and demonstrate overall literacy in technology
- Develop and demonstrate skills in financial and cost accounting systems that are common to most businesses
- Develop and demonstrate skills in US tax fundamentals for individuals and businesses
- Demonstrate skills and knowledge in auditing
- Demonstrate competencies in ethical decision making
- Demonstrate knowledge of liberal education that provides a foundation for the applied curriculum
- Demonstrate a commitment to continuing professional development
- Demonstrate skills in communication, working with others, and critical thinking

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

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

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements

A minimum of 40 upper-division credits are required to graduate.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Accounting Core

Take 21 courses totaling 63 credits from the following:

ACCT 2101 - Principles of Accounting I (3.0 cr)
ACCT 2102 - Principles of Accounting II (3.0 cr)
ACCT 3010 - Managerial Accounting (3.0 cr)
ACCT 3201 - Intermediate Accounting I (4.0 cr)
ACCT 3202 - Intermediate Accounting II (4.0 cr)
ACCT 3220 - Accounting Systems (3.0 cr)
ACCT 3301 - Cost Accounting I (3.0 cr)
ACCT 3302 - Cost Accounting II (3.0 cr)
ACCT 4110 - Advanced Accounting I (3.0 cr)
ACCT 4111 - Advanced Accounting II (3.0 cr)
ACCT 4221 - Auditing I (3.0 cr)
ACCT 4310 - Auditing II (3.0 cr)
ACCT 4404 - Income Tax I (3.0 cr)
ACCT 4405 - Income Tax II (3.0 cr)
ACCT 4800 - Accounting Data Analytics (3.0 cr)
FIN 3100 - Managerial Finance (3.0 cr)
GBUS 1005 - Orientation to Online Learning (1.0 cr)
GBUS 3107 - Legal Environment in Business (3.0 cr)
MGMT 3200 - Principles of Management (3.0 cr)
MKTG 3300 - Principles of Marketing (3.0 cr)
Choose one of the following:
   COMM 3008 - Business Writing (3.0 cr)
   or WRIT 3303 - Writing in Your Profession (3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 8 course(s) totaling exactly 24 credit(s) from the following:
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CA 1020 - Spreadsheet Applications (3.0 cr)

Open and/or Recommended Electives
Students need to take enough open and/or recommended elective credits to satisfy the 120 credit requirement for graduation. The following are recommended electives:
Take 0 or more credit(s) from the following:
- ACCT 3900 - Internship (1.0 - 12.0 cr)
- ACCT 4420 - Income Tax Preparation (3.0 cr)
- ACCT 4500 - Forensic Accounting (3.0 cr)
- ACCT 4511 - CPA Review Course--Regulation (3.0 cr)
- ACCT 4512 - CPA Review Course--Financial Reporting and Accounting (3.0 cr)
- ACCT 4513 - CPA Review Course--Auditing and Attestation (3.0 cr)
- ACCT 4514 - CPA Review Course--Business Environment and Concepts (3.0 cr)

Program Sub-plans
A sub-plan is not required for this program.
Crookston Campus
Accounting Minor
Business
Academic Affairs

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 26 to 27

A minor in accounting complements several other majors. The accounting minor introduces students to the theory and practice of accounting, including the basics of generally accepted accounting principles. The accounting minor has flexibility to allow a student to concentrate in taxation, cost accounting, auditing, or financial accounting. The accounting minor also may be used to help qualify the student to take the CPA exam.

Program outcomes: students who earn an accounting minor will
* understand generally accepted accounting principles
* perform accounting functions based on generally accepted accounting principles
* perform accounting functions using various accounting and tax software

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

Minor Requirements
Accounting Core
Take exactly 6 course(s) totaling exactly 20 credit(s) from the following:
• ACCT 2101 - Principles of Accounting I (3.0 cr)
• ACCT 2102 - Principles of Accounting II (3.0 cr)
• ACCT 3010 - Managerial Accounting (3.0 cr)
• ACCT 3201 - Intermediate Accounting I (4.0 cr)
• ACCT 3202 - Intermediate Accounting II (4.0 cr)
• ACCT 3220 - Accounting Systems (3.0 cr)

Accounting Electives
Any course counting towards the Accounting Core cannot also count towards the Accounting Electives.
Take 6 or more credit(s) from the following:
• ACCT 3301 - Cost Accounting I (3.0 cr)
• ACCT 3302 - Cost Accounting II (3.0 cr)
• ACCT 3900 - Internship (1.0 - 12.0 cr)
• ACCT 4110 - Advanced Accounting I (3.0 cr)
• ACCT 4111 - Advanced Accounting II (3.0 cr)
• ACCT 4221 - Auditing I (3.0 cr)
• ACCT 4310 - Auditing II (3.0 cr)
• ACCT 4404 - Income Tax I (3.0 cr)
• ACCT 4405 - Income Tax II (3.0 cr)
• ACCT 4420 - Income Tax Preparation (3.0 cr)
• ACCT 4500 - Forensic Accounting (3.0 cr)
• ACCT 4511 - CPA Review Course--Regulation (3.0 cr)
• ACCT 4512 - CPA Review Course--Financial Reporting and Accounting (3.0 cr)
• ACCT 4513 - CPA Review Course--Auditing and Attestation (3.0 cr)
• ACCT 4514 - CPA Review Course--Business Environment and Concepts (3.0 cr)

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

Online
A minor in accounting online complements several other majors. The accounting minor online introduces students to the theory and
practice of accounting, including the basics of generally accepted accounting principles. The accounting minor online, which has the same curriculum as the classroom delivered accounting minor, has flexibility to allow student to concentrate in taxation, cost accounting, auditing, or financial accounting. The accounting minor online also may be used to help qualify the student to take the CPA exam.

Program outcomes: students who earn an accounting minor online will
* understand generally accepted accounting principles
* perform accounting functions based on generally accepted accounting principles
* perform accounting functions using various accounting and tax software

Technology
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus
Agricultural Business B.S.
Agriculture and Natural Resources
Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 48 to 49
• This program requires summer terms.
• Degree: Bachelor of Science

The program blends a strong base of agriculture, business, and general education courses while maximizing flexibility that allows students to choose electives to fit their career interests and expectations. A wide array of challenging, satisfying, and rewarding careers await graduates as demand for trained personnel in agribusiness continues to outstrip the supply of qualified graduates. Clusters of employment opportunities include agricultural sales and marketing, agribusiness management, agribusiness finance, agribusiness information management, food marketing management, global agribusiness, and rural economic development.

Program outcomes; graduates demonstrate ability to:

Create and present a strategic agribusiness plan that incorporates market analysis, risk analysis, and financial analysis.
Select and apply investment analysis techniques and interpret results.
Construct, interpret, and analyze a set of coordinated financial statements, consisting of balance sheets, income statement, and statement of cash flow.
Demonstrate competency in the use of spreadsheets, computerized recording keeping, and financial analysis software.
Demonstrate knowledge and understanding of the interconnections between production, sales, and the consumption of food and fiber.
Evaluate the impact of cash forward contracts, commodity futures, and option contracts on the buying/selling prices of commodities.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

Agricultural Business Core
A minimum grade of C- is required in the following core classes.
Take 17 or more course(s) totaling 45 or more credit(s) from the following:
• ACCT 2101 - Principles of Accounting I (3.0 cr)
• AGEC 1004 - Introduction to Agribusiness (3.0 cr)
• AGEC 2310 - Agribusiness Financial Records (3.0 cr)
• AGEC 2530 - Professional Agriselling (3.0 cr)
• AGEC 3050 - Economics for Agribusiness Management (3.0 cr)
• AGEC 3540 - Farm Business Management (3.0 cr)
• AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
• AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
**AGEC 4760 - Business Plan Development for Agribusiness (3.0 cr)**
**GBUS 3107 - Legal Environment in Business (3.0 cr)**
**MGMT 3200 - Principles of Management (3.0 cr)**
**MKTG 3300 - Principles of Marketing (3.0 cr)**

Choose one of the following:
- **AGEC 3430 - Food Marketing Systems (3.0 cr)**
- **or AGEC 3440 - Fundamentals of Value Added Agriculture (3.0 cr)**

Choose one of the following:
- **COMM 3008 - Business Writing (3.0 cr)**
- **or COMM 3704 - Business and Professional Speaking (3.0 cr)**

**Internship**

*Pre-Internship Seminar*
Choose one of the following:
- **GNAG 2899 - Pre-Internship Seminar (0.5 cr)**
- **or GNAG 3899 - Pre-Internship Seminar (0.5 cr)**

*Internship*
Take 2 or more credit(s) from the following:
- **GNAG 3900 - Internship (0.5 - 3.0 cr)**

*Post Internship Seminar*
- **GNAG 3901 - Post Internship Seminar (0.5 cr)**

**Agricultural Business Elective**
A minimum grade of C- is required in the following core classes.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- **AGRO 1183 - Field Crops: Production Principles (3.0 cr)**
- **or ANSC 1004 - Introduction to Animal Science (4.0 cr)**
- **or ASM 1021 - Introduction to Agricultural Systems Management (3.0 cr)**
- **or HORT 1010 - Introduction to Horticulture (3.0 cr)**
- **or TURF 1072 - Principles of Turf Management (3.0 cr)**

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 8 or more course(s) totaling 26 or more credit(s) from the following:
- **BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)**
- **CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)**
- **COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)**
- **COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)**
- **ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)**
- **MATH 1031 - College Algebra [MATH THINK] (3.0 cr)**
- **MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)**
- **COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)**

**Technology**
If applicable, the course taken from below may be used to satisfy both the program and technology requirements.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- **AGEC 2310 - Agribusiness Financial Records (3.0 cr)**
- **AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)**
- **CA 1xxx**
- **CA 2xxx**

**Agriculture/Business/Communication/Technology Electives**
Students must complete 18 credits selected from the following prefixes and in consultation with an advisor.
Take 18 or more credit(s) from the following:
- **ACCT**
- **AGEC**
- **AGRO**
- **ANSC**
- **ASM**
- **CA**
- **COMM**
- **ENTR**
- **EQSC**
- **FIN**
- **GBUS**
Open Electives
Students must take enough open electives credits to meet the 120 credit requirement for graduation.

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

Online
The program blends a strong base of agriculture, business, and general education courses while maximizing flexibility that allows students to choose electives to fit their career interests and expectations. A wide array of challenging, satisfying, and rewarding careers await graduates as demand for trained personnel in agribusiness continues to outstrip the supply of qualified graduates. Clusters of employment opportunities include agricultural sales and marketing, agribusiness management, agribusiness finance, agribusiness information management, food marketing management, global agribusiness, and rural economic development.

Students must complete 40 upper division credits.

Orientation to Online Learning
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• GBUS 1005 - Orientation to Online Learning (1.0 cr)

Agricultural Business Core
See on-campus Agricultural Business Core with below exceptions:
A minimum grade of C- is required in the following core classes, except for the communication choice.

NOT REQUIRED:
GNAG 3899 - Pre-Internship Seminar (0.5 cr)
GNAG 3901 - Post Internship Seminar (0.5 cr)

REQUIRED FOR 3 CREDITS
GNAG 3900 - Internship (3.0 cr)

Agricultural Business Elective
For the Agricultural Business Elective requirement, Online sub-plan students must take AGRO 1183 - Field Crops: Production Principles (3.0 cr).

Liberal Education
See on-campus requirements with the following exception:
NOT REQUIRED: CHEM 1001 - Introductory Chemistry

Technology
See on-campus requirements.

Agriculture/Business/Communication/Technology Electives
See on-campus requirements.

Open Electives
See on-campus requirements.

Northland Community and Technical College Dual Enrollment
Crookston Campus
Agricultural Business Certificate
Agriculture and Natural Resources
Academic Affairs

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 21
- Degree: Agricultural Business Certificate

The agricultural business certificate gives students a broad understanding of marketing techniques, livestock and grain commodities, financing, and economics of agriculture. This certificate provides students valuable information and skills regardless of whether they work in lending, consulting, sales, or run their own business.

Program Delivery
This program is available:
- completely online (all program coursework can be completed online)

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. For more information, see the graduation requirements.

Program Requirements
Agricultural Business Certificate
Take exactly 7 course(s) totaling exactly 21 credit(s) from the following:
- AGE 2530 - Professional Agriselling (3.0 cr)
- AGE 3540 - Farm Business Management (3.0 cr)
- AGE 3640 - Agricultural Finance and Valuation (3.0 cr)
- AGE 4740 - Grain and Livestock Marketing (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- Choose one of the following:
  - ACCT 2102 - Principles of Accounting II (3.0 cr)
  - or AGE 2310 - Agribusiness Financial Records (3.0 cr)
  - Choose one of the following:
    - COMM 3008 - Business Writing (3.0 cr)
    - or COMM 3704 - Business and Professional Speaking (3.0 cr)
    - or MGMT 3210 - Supervision and Leadership (3.0 cr)

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

Online
Crookston Campus
Agricultural Business Minor
Agriculture and Natural Resources
Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 21

The agricultural business minor gives students a broad understanding of marketing techniques, livestock and grain commodities, financing, and economics of agriculture. This minor complements many of the agriculture-based majors as well as business such that students learn valuable information regardless of whether they work in lending, consulting, sales, or run their own business.

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)

Minor Requirements
A minimum grade of C- in any course in the Agricultural Business Minor will be required.

Agricultural Business Minor
Take exactly 7 course(s) totaling 21 or more credit(s) from the following:
- AGEC 2530 - Professional Agriselling (3.0 cr)
- AGEC 3540 - Farm Business Management (3.0 cr)
- AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
- AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- Choose one of the following:
  - ACCT 2102 - Principles of Accounting II (3.0 cr)
  - or AGEC 2310 - Agribusiness Financial Records (3.0 cr)
- Choose one of the following:
  - COMM 3008 - Business Writing (3.0 cr)
  - or COMM 3704 - Business and Professional Speaking (3.0 cr)
  - or MGMT 3210 - Supervision and Leadership (3.0 cr)

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

Online
The Agricultural Business Minor Online has the same curriculum as the on-campus minor.
Crookston Campus

Agricultural Communication B.S.
Agriculture and Natural Resources

Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 67
• This program requires summer terms.
• Degree: Bachelor of Science

The BS in agricultural communication prepares students to be effective communicators in agribusinesses, commodity groups, agricultural advocacy agencies, and agricultural communication organizations. The program blends agriculture, communication, and liberal education courses that prepare students for a wide variety of career choices.

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. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for courses under communication core, agriculture core, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Agriculture Core
Take exactly 7 course(s) totaling 21 or more credit(s) from the following:
• AGEC 1005 - World Agricultural Food Systems (3.0 cr)
• AGEC 3430 - Food Marketing Systems (3.0 cr)
• AGRO 1183 - Field Crops: Production Principles (3.0 cr)
• ANSC 1004 - Introduction to Animal Science (4.0 cr)
• ASM 2200 (Inactive) (3.0 cr)
• HORT 1010 - Introduction to Horticulture (3.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)

Internship
Take 3 or more credit(s) from the following:
• GNAG 3899 - Pre-Internship Seminar (0.5 cr)
• GNAG 3900 - Internship (0.5 - 3.0 cr)
• GNAG 3901 - Post Internship Seminar (0.5 cr)

Communication Core
Take 7 or more course(s) totaling 21 or more credit(s) from the following:
• COMM 3000 - Communication Theory (3.0 cr)
• COMM 3431 - Persuasion (3.0 cr)
• COMM 3704 - Business and Professional Speaking (3.0 cr)
COMM 4000 - News and Social Media Communication (3.0 cr)
COMM 4704 - Organizational Communication (3.0 cr)

Choose one of the following:

- COMM 4007 - Political Communication (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)

Choose one of the following:

- COMM 3710 - Event Planning and Management (3.0 cr)
- COMM 4900 - Public Relations (3.0 cr)

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

- AGEC 2530 - Professional Agriselling (3.0 cr)
- AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
- ANSC 1206 - Sheep and Swine Production Techniques (2.0 cr)
- ASM 2250 - Agricultural Machinery Management (3.0 cr)
- ASM 3201 - Applications in Precision Agriculture (3.0 cr)
- AGRO 3444 - Crop Production (4.0 cr)
- NATR 1233 - Introduction to Natural Resources (3.0 cr)
- NATR 3344 - Land Use Planning (3.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- SWM 3224 - Soil and Water Conservation (4.0 cr)
- SWM 3225 - Watershed Management (3.0 cr)

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

- COMM 3008 - Business Writing (3.0 cr)
- COMM 3537 - Visual Communication (3.0 cr)
- COMM 3610 - Corporate Training (3.0 cr)
- COMM 3710 - Event Planning and Management (3.0 cr)
- COMM 3857 - Technical Communication (3.0 cr)
- COMM 4007 - Political Communication (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)
- COMM 4802 - Publication Design and Management (3.0 cr)
- COMM 4850 - Report Writing (3.0 cr)
- COMM 4900 - Public Relations (3.0 cr)
- WRIT 2223 - English Grammar and Usage (3.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)
- WRIT 3856 - Editing (3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take exactly 7 course(s) totaling exactly 22 credit(s) from the following:

- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- NATR 1226 - Environmental Science and Sustainability [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Choose one of the following:

- BIOL 1000 - Biology and Society [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)

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

- COMM 2110 - Communication Technology Trends (3.0 cr)

Open Electives
Students must take enough open elective credits to meet the 120 credit requirement for graduation.
Crookston Campus
Agricultural Education B.S.
Agriculture and Natural Resources
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 124
- Required credits within the major: 84 to 85
- Degree: Bachelor of Science

A bachelor of science degree in agricultural education at UMC is a career-oriented degree that has three emphases available to students. Agricultural science, agricultural systems engineering technology, and natural and managed environmental science allow students the flexibility to select the emphasis that matches their career goals. All emphases serve students preparing to teach agriscience, agribusiness, agriculture, horticulture, food systems, agrimechanics, natural resource management, engineering technology used in agriculture, and management of the associated student organization (FFA) including SAE (Supervised Agricultural Experience). Each fits within the licensure field of agricultural education in public schools at the 5-12 grade levels. A second license will allow graduates to teach work-based learning skills and supervise work-based learning students placed on the job as a part of their education. Graduates with the agricultural science emphasis are also qualified for a broad array of agriculturally-related positions in sales, management, agricultural finance, and production aspects of agriculture. Graduates with a natural and managed environmental science emphasis can enter environmental learning center education, natural resource management, and soils conservation-related fields. Graduates with an agricultural systems engineering technology emphasis can provide customer service to precision agriculture systems, machinery sales and service, welding services, and facilities design and selection.

Program Outcomes for Agricultural Education

Graduates will be able to:
- Apply learners' growth and development principles across all domains to design and implement developmentally appropriate learning experiences;
- Ensure inclusive learning through understanding of individual differences and diverse cultures;
- Work with others to create environments that support collaborative and engaged learning including self-motivation;
- Demonstrate content knowledge, concepts, and tools of inquiry in the career clusters associated with agriculture, natural resources, and forestry;
- Connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and problem-solving in authentic contexts;
- Use a variety of assessment tools and practices to monitor learner progress and to plan and evaluate effective instruction;
- Plan instruction that supports all learners in meeting rigorous learning goals within an integrated curriculum;
- Use a variety of instructional strategies that encourage learners to develop a deep understanding of content and make relevant connections;
- Engage in ethical practices and professional development as a career-long effort and responsibility;
- Provide leadership and collaborate with families, school professionals, and community members in support of student learning.

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

(1) Earn a minimum GPA of 2.50 overall. (2) Take the Minnesota Teacher Licensure Examination (MTLE) Basic Skills tests. (3) Purchase personal liability insurance: can be obtained inexpensively through an annual student membership in Education Minnesota or Minnesota Association of Agricultural Educators. (4) Successful completion of ED 2200, Foundations of Education. (5) Complete and submit Teacher Education Application package. (6) Submit a reflective writing sample.

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

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Agricultural Education Core
Take exactly 10 course(s) totaling exactly 24 credit(s) from the following:
- AGED 1001 - Careers in Agricultural Education, Extension Education and Farm Business Management (1.0 cr)
- AGED 2001 - Early Experience in Agricultural Education (1.0 cr)
- AGED 3003 - SAE (Supervised Agricultural Experience) and FFA (3.0 cr)
- AGED 4001 - Methods of Teaching Farm Business Management (1.0 cr)
- AGED 4003 - Agricultural Education Program Organization (3.0 cr)
- AGED 4600 - Student Teaching: Work-Based Learning (1.0 cr)
- AGED 4700 - Student Teaching: Farm Business Management (1.0 cr)
- AGED 4900 - Student Teaching: High School (8.0 cr)

Agriculture and Natural Resources Core
Take exactly 7 course(s) totaling exactly 24 credit(s) from the following:
- AGEC 2310 - Agribusiness Financial Records (3.0 cr)
- ANSC 1004 - Introduction to Animal Science (4.0 cr)
- ASM 1034 - Facility Maintenance and Safety (4.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)
- GNAG 3203 - Ag Products and Processing (3.0 cr)
  or GNAG 3204 - International Agricultural Production, Processing, and Marketing (3.0 cr)

Education Core
Take exactly 11 course(s) totaling exactly 22 credit(s) from the following:
- ED 2200 - Foundations of Education (3.0 cr)
- ED 2400 - Introduction to Middle and High School Education and Experiential Learning (3.0 cr)
- ED 3000 - Cultural Immersion (1.0 cr)
- ED 3001 - Perspectives of Substance Use for Educators (1.0 cr)
- ED 3009 - Human Relations in Diversity (1.0 cr)
- ED 3110 - Educational Psychology (3.0 cr)
- ED 3210 - Reading in the Content Area (2.0 cr)
- ED 3500 - Introduction to Children with Special Needs (2.0 cr)
- ED 3600 - Classroom Management in Middle School and High School Settings (3.0 cr)
- ED 4400 - Teaching Grades 5-12 Students in Inclusive Environments (2.0 cr)
- ED 4800 - Senior Professional Seminar (1.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 7 course(s) totaling exactly 22 credit(s) from the following:
- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ED 2100 - Child and Adolescent Development and Learning [HI/BEH/SSC] (3.0 cr)
- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
If applicable, the course(s) taken from below may be used to satisfy both the program and technology requirements.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ASM 3360 - Applications in Precision Agriculture (3.0 cr)
  or CA 1xxx
  or CA 2xxx
or ED 2000 - Educational Technology for P-12th Settings (3.0 cr)
or ED 4000 - Educational Technology Applications (1.0 cr)
or NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)

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

Agricultural Science
Graduates with the agricultural science emphasis are qualified for a broad array of agriculturally related positions in sales, management, agricultural finance, and production aspects of agriculture.

The Agricultural Education BS with an emphasis in Agricultural Science requires a minimum of 84 major credits.

Agricultural Science Core
Take exactly 3 course(s) totaling exactly 10 credit(s) from the following:
- AGRO 1183 - Field Crops: Production Principles (3.0 cr)
- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
- HORT 1010 - Introduction to Horticulture (3.0 cr)

Animal Production Core
Take 1 or more course(s) totaling 4 or more credit(s) from the following:
- ANSC 1206 - Sheep and Swine Production Techniques (2.0 cr)
- ANSC 3204 - Dairy Production (4.0 cr)
- ANSC 3303 - Beef Production (4.0 cr)
- EQSC 2102 - Horse Production (4.0 cr)

Agriculture and Natural Resources Electives
Students must take enough agriculture and natural resources elective credits to satisfy the 124 credit graduation requirement.
Take 0 or more credit(s) from the following:
- AGEC
- AGED
- AGRO
- ANSC
- ASM
- AVIA
- EQSC
- GNAG
- HORT
- NATR
- SOIL
- SWM
- TURF

Agricultural Systems Engineering Technology
Graduates with an agricultural systems engineering technology emphasis can provide customer service to precision agriculture systems, machinery sales and service, welding services, and facilities design and selection.

The Agricultural Education BS with an emphasis in Agricultural Systems Engineering Technology requires a minimum of 85 major credits.

Agricultural Systems Engineering Technology Core
Take 4 or more courses totaling 13 or more credits from the following:
- ASM 2200 - Intro to Renewable Energy Systems (3 cr) (Substitute course required)
- ASM 2053 - Electricity, Controls, and Sensors in Agriculture (3.0 cr)
- ASM 3360 - Applications in Precision Agriculture (3.0 cr)
- PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)

Agricultural Systems Management Electives
Take 1 or more course(s) totaling 2 or more credit(s) from the following:
- ASM 1xxx
- ASM 2xxx
- ASM 3xxx

Recommended ASM Electives
- ASM 2043 - Welding and Manufacturing Processes (3.0 cr)
or ASM 3002 - Agricultural Mobile Power Systems (3.0 cr)

Agriculture and Natural Resources Electives
Students must take enough agriculture and natural resources elective credits to satisfy the 124 credit graduation requirement. Take 0 or more credit(s) from the following:

- AGEC
- AGED
- AGRO
- ANSC
- ASM
- AVIA
- EQSC
- GNAG
- HORT
- NATR
- SOIL
- SWM
- TURF

Natural and Managed Environmental Education
Graduates with a natural and managed environmental education emphasis can enter environmental learning center education, natural resource management, and soils conservation related fields.

The Agricultural Education BS with an emphasis in Natural and Managed Environmental Education requires a minimum of 84 major credits.

Natural and Managed Environmental Education Core
Take exactly 4 course(s) totaling exactly 14 credit(s) from the following:

- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
- HORT 1010 - Introduction to Horticulture (3.0 cr)
- NATR 1233 - Introduction to Natural Resources (3.0 cr)
- NATR 1244 - Elements of Forestry (4.0 cr)

Agriculture, Natural Resources, and Environmental Sciences Electives
Students must take enough agriculture, natural resources, and/or environmental sciences elective credits to satisfy the 124 credit graduation requirement. Take 0 or more credit(s) from the following:

- AGEC
- AGED
- AGRO
- ANSC
- ASM
- AVIA
- ENSC
- EQSC
- GNAG
- HORT
- NATR
- SOIL
- SWM
- TURF
**CROOKSTON CAMPUS**

**Agricultural Systems Management B.S.**

**Agriculture and Natural Resources**

**Academic Affairs**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 61 to 63
- This program requires summer terms.
- Degree: Bachelor of Science

This program combines students’ interests in machinery, technology, and crop and livestock production with superior people skills, creative thinking, and problem solving to build a career in the agricultural and food production industry.

Agricultural systems management graduates are well versed in agricultural foundations and have working knowledge of economic systems with a well-developed sense of professionalism. Companies are looking for multi-talented people who are confident around computers, machines, and business plans. The agricultural systems management program offers three areas of emphasis to provide a unique portfolio of technical and business skills that gives graduates an edge in the job market.

Program outcomes: graduates will:
- be well versed in agricultural foundations,
- be technically proficient and knowledgeable in agricultural technologies,
- have working knowledge of economic systems and financial management,
- possess speaking, listening, and writing communication skills,
- and have a well-developed sense of professionalism.

**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/admissions).

**General Requirements**

All students are required to complete general University and college requirements. For more information, see the [graduation requirements](http://www.umn.edu/graduation).

**Program Requirements**

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

**Agricultural Systems Management Core**

Take 15 or more course(s) totaling 40 or more credit(s) from the following:

- **AGEC 1004** - Introduction to Agribusiness (3.0 cr)
- **AGEC 2310** - Agribusiness Financial Records (3.0 cr)
- **AGRO 1183** - Field Crops: Production Principles (3.0 cr)
- **ANSC 1004** - Introduction to Animal Science (4.0 cr)
- **ASM 1034** - Facility Maintenance and Safety (4.0 cr)
- **ASM 2250** - Agricultural Machinery Management (3.0 cr)
- **ASM 3002** - Agricultural Mobile Power Systems (3.0 cr)
- **ASM 3005** - Facilities Planning and Selection (3.0 cr)
- **ASM 3009** - Surveying (4.0 cr)
- **GNAG 4652** - Senior Seminar (1.0 cr)
- **SOIL 1293** - Soil Science (3.0 cr)

Choose one of the following:
• COMM 3008 - Business Writing (3.0 cr)
or COMM 3704 - Business and Professional Speaking (3.0 cr)
or MGMT 3210 - Supervision and Leadership (3.0 cr)
or WRIT 3303 - Writing in Your Profession (3.0 cr)

Internship

Pre-Internship Seminar
GNAG 2899 - Pre-Internship Seminar (0.5 cr)

or GNAG 3899 - Pre-Internship Seminar (0.5 cr)

Internship
Take 2 or more credits of GNAG 3900.

GNAG 3900 - Internship (0.5 - 3.0 cr)

Post-Internship Seminar
GNAG 3901 - Post Internship Seminar (0.5 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take 7 - 9 course(s) from the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)

Communication Choice
Choose one of the following:
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
• COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)

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

Farm and Ranch Management
This emphasis focuses on a blend of business and production management. The program's goal is to provide a solid foundation to allow the graduate to be competitive and succeed in the changing world of modern agriculture.

Farm and Ranch Operation Core
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
• AGEC 3540 - Farm Business Management (3.0 cr)
• AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
• AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
• ASM 2043 - Welding and Manufacturing Processes (3.0 cr)

Take 9 or more credit(s) from the following:
• AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)
• AGEC 3440 - Fundamentals of Value Added Agriculture (3.0 cr)
• AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
• AGRO 3130 - Forages (3.0 cr)
• AGRO 3444 - Crop Production (4.0 cr)
• ANSC 2104 - Feeds and Feeding (4.0 cr)
• ANSC 3004 - Livestock Facilities and Environmental Systems (3.0 cr)
• ANSC 3204 - Dairy Production (4.0 cr)
• ANSC 3303 - Beef Production (4.0 cr)
• SOIL 3414 - Soil Fertility and Plant Nutrition (4.0 cr)

Open Electives
Students must take enough open electives credits to satisfy the 120 credit graduation requirement.

Technology
Take 3 or more credit(s) from the following:
• AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)

Precision Agriculture
Work in the field or in an office to help others improve agriculture production practices (chemical application, planting, pest management) by using satellites, geographical information systems (GIS), and precision data analysis. Field data collection, analysis, and application are keys to improving agricultural production management practices and implementing efficiencies.
**Precision Agriculture Core**
Take 10 or more course(s) totaling 23 or more credit(s) from the following:
- AGEC 2530 - Professional Agriselling (3.0 cr)
- AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
- AGRO 3444 - Crop Production (4.0 cr)
- ASM 3360 - Applications in Precision Agriculture (2.0 cr)
- ASM 3365 - Applications in Precision Agriculture Laboratory (1.0 cr)
- ASM 3511 - Yield Monitoring and Data Interpretation (1.0 cr)
- ASM 3512 - Remote Sensing Applications in Precision Agriculture (1.0 cr)
- ASM 3513 - Precision Farming Data (1.0 cr)
- NATR 3635 - Geographic Information Systems Applications (3.0 cr)
- SOIL 3414 - Soil Fertility and Plant Nutrition (4.0 cr)

**Technology**
Take 3 or more credit(s) from the following:
- NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)

**Open Electives**
Students must take enough open electives credits to satisfy the 120 credit graduation requirement.
Crookston Campus
Agricultural Systems Management Minor

Agriculture and Natural Resources

Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18

A minor in agricultural systems management provides an opportunity for students to learn the principles of agricultural technologies and how they relate to crop and livestock production and modern agricultural machinery. The opportunity exists for students to gain valuable knowledge in the area of renewable energy and bio-fuels technology and how that relates to agricultural enterprises.

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

Minor Requirements

Agricultural Systems Management Minor
Take 6 or more course(s) totaling 18 or more credit(s) from the following:
- ASM 1021 - Introduction to Agricultural Systems Management (3.0 cr)
- ASM 1034 - Facility Maintenance and Safety (4.0 cr)
- ASM 2043 - Welding and Manufacturing Processes (3.0 cr)
- ASM 2053 - Electricity, Controls, and Sensors in Agriculture (3.0 cr)
- ASM 2200 - Inactive (3.0 cr)
- ASM 2250 - Agricultural Machinery Management (3.0 cr)
- ASM 3002 - Agricultural Mobile Power Systems (3.0 cr)
- ASM 3005 - Facilities Planning and Selection (3.0 cr)
- ASM 3009 - Surveying (4.0 cr)
- ASM 3201 - Inactive (3.0 cr)
- ASM 3202 - Inactive (3.0 cr)
- ASM 3360 - Applications in Precision Agriculture (3.0 cr)
- ASM 3511 - Yield Monitoring and Data Interpretation (1.0 cr)
- ASM 3512 - Remote Sensing Applications in Precision Agriculture (1.0 cr)
- ASM 3513 - Precision Farming Data (1.0 cr)
Crookston Campus
Agronomy B.S.
Agriculture and Natural Resources
Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 69
• This program requires summer terms.
• Degree: Bachelor of Science

The BS in agronomy is a career-oriented program that combines science-based agriculture training and education with a strong liberal arts background to produce graduates skilled in the highly technical fields of agronomic science and crop production. The flexibility of the two tracks, agronomy and crop production enables students to build a thorough understanding of crop science with a concentration in areas such as crop production, agricultural chemicals, fertilizers, integrated pest management, seed conditioning and technology, and other areas related to production and quality in the food and fiber industry.

Program outcomes: graduates will:

Demonstrate appropriate skills necessary for employment in agronomic sciences or crop production.
Demonstrate skills in general education and management that provide a foundation for the applied curriculum.
Develop and demonstrate an attitude of continued inquiry and lifelong learning.

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. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Agronomy Core
Take exactly 15 course(s) totaling exactly 48 credit(s) from the following:
• AGRO 1030 - Crop and Weed Identification (3.0 cr)
• AGRO 1183 - Field Crops: Production Principles (3.0 cr)
• AGRO 1540 - Seed Conditioning and Technology (4.0 cr)
• AGRO 2573 - Entomology (3.0 cr)
• AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
• AGRO 2840 - Grain and Seed Evaluation (4.0 cr)
• AGRO 3023 - Plant Breeding and Genetics (4.0 cr)
• AGRO 3130 - Forages (3.0 cr)
• AGRO 3230 - Introduction to Plant Pathology (3.0 cr)
• AGRO 3444 - Crop Production (4.0 cr)
• AGRO 3630 - Integrated Crop Management (Capstone) (3.0 cr)
• GNAG 4652 - Senior Seminar (1.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• SOIL 3414 - Soil Fertility and Plant Nutrition (4.0 cr)
• BIOL 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

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

**Pre-Internship Seminar**
- GNAG 2899 - Pre-Internship Seminar (0.5 cr)
- or GNAG 3899 - Pre-Internship Seminar (0.5 cr)

**Internship**
Take 2 or more credit(s) from the following:
- GNAG 3900 - Internship (0.5 - 3.0 cr)

**Post-Internship Seminar**
- GNAG 3901 - Post Internship Seminar (0.5 cr)

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 6 course(s) totaling exactly 20 credit(s) from the following:
- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- Choose one of the following:
  - MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  - or MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- Choose one of the following:
  - COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
  - or COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)

**Technology**
If applicable, the course chosen to fulfill the technology requirement may also satisfy a major requirement.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)
- CA 1xxx
- CA 2xxx
- NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)

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

**Agronomic Science**
The agronomic science track allows students to build a thorough understanding of crop science with a concentration in areas such as agricultural chemicals, fertilizers, integrated pest management, and seed conditioning and technology.

**Agronomic Science Core**
Take exactly 4 course(s) totaling exactly 13 credit(s) from the following:
- AGRO 3030 - Research Techniques in Agriculture and Natural Resources (3.0 cr)
- AGRO 3640 - Weed Science (3.0 cr)
- BIOL 3131 - Plant Physiology (3.0 cr)
- CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)

**Agriculture/Natural Resources Electives**
Take 5 or more credit(s) from the following:
- AGEC
- AGRO
- ANSC
- ASM
- GNAG
- HORT
- NATR
- TURF

**Crop Production**
The crop production track, along with building strong agronomic skills, has an agricultural business component that allows students to develop their marketing and farm business management skills.
Crop Production Core
Take exactly 4 course(s) totaling exactly 13 credit(s) from the following:
• AGEC 2310 - Agribusiness Financial Records (3.0 cr)
• AGEC 3540 - Farm Business Management (3.0 cr)
• AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
• SWM 3224 - Soil and Water Conservation (4.0 cr)

Agriculture/Natural Resources Electives
Take 5 or more credit(s) from the following:
• AGEC
• AGRO
• ANSC
• ASM
• GNAG
• HORT
• NATR
• TURF
**Crookston Campus**

**Agronomy Minor**  
*Agriculture and Natural Resources*  
**Academic Affairs**

- Program Type: Undergraduate minor related to major  
- Requirements for this program are current for Fall 2021  
- Required credits in this minor: 24 to 25

The agronomy minor prepares graduates to work in crop production operations and provides entry level education for jobs in the agriculture service sector. Potential employers include seed, feed, fertilizer, and chemical companies, grain inspection facilities, and grain elevators.

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

**Minor Requirements**  
**Agronomy Minor**  
Take exactly 7 course(s) totaling 24 - 25 credit(s) from the following:  
- **AGRO 1030** - Crop and Weed Identification (3.0 cr)  
- **AGRO 2640** - Applied Agriculture Chemicals (3.0 cr)  
- **AGRO 3023** - Plant Breeding and Genetics (4.0 cr)  
- **SOIL 3414** - Soil Fertility and Plant Nutrition (4.0 cr)  
  - Choose one of the following:  
    - **AGRO 1540** - Seed Conditioning and Technology (4.0 cr)  
    - **AGRO 2840** - Grain and Seed Evaluation (4.0 cr)  
  - Choose one of the following:  
    - **AGRO 2573** - Entomology (3.0 cr)  
    - **AGRO 3230** - Introduction to Plant Pathology (3.0 cr)  
  - Choose one of the following:  
    - **AGRO 3130** - Forages (3.0 cr)  
    - **AGRO 3444** - Crop Production (4.0 cr)
Crookston Campus
Animal Science B.S.
Agriculture and Natural Resources
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120 to 124
- Required credits within the major: 69 to 79
- This program requires summer terms.
- Degree: Bachelor of Science

The bachelor of science in animal science leads to careers in livestock production and management or one of the many allied industries, such as feed production, artificial insemination, and livestock or farm equipment support and sales. In addition, students can meet the requirements to attend graduate school or veterinary college.

Coursework includes computer and communications training, sales, and business management. Other required coursework is traditional to livestock degrees, but students have the option of taking courses specific to their interests. Options also exist for students who wish to pursue pre-veterinary studies.

Program outcomes:
Demonstrate competencies in dairy/livestock management;
Demonstrate individual communication skills;
Demonstrate personal problem solving, decision-making, and critical thinking skills;
Demonstrate technology skills used for dairy/livestock management decision making and problem-solving;
Work effectively in teams; and
Be able to obtain a career in the dairy/livestock industry.

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. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Animal Science Core
Take 14 or more course(s) totaling 48 or more credit(s) from the following:
- ANSC 1004 - Introduction to Animal Science (4.0 cr)
- ANSC 1101 - Animal Evaluation (1.0 cr)
- ANSC 2104 - Feeds and Feeding (4.0 cr)
- ANSC 3004 - Livestock Facilities and Environmental Systems (3.0 cr)
- ANSC 3023 - Animal Breeding (3.0 cr)
- ANSC 3104 - Applied Animal Nutrition (4.0 cr)
- ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
- ANSC 3204 - Dairy Production (4.0 cr)
- ANSC 3303 - Beef Production (4.0 cr)
- ANSC 3304 - Reproduction, AI, and Lactation (4.0 cr)
- ANSC 3503 - Animal Health and Disease (3.0 cr)
• ANSC 4204 - Animal Systems Management (3.0 cr)
• BIOL 2032 - General Microbiology (4.0 cr)
• BIOL 3022 - Principles of Genetics (3.0 cr)

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

Pre-Internship Seminar
• GNAG 2899 - Pre-Internship Seminar (0.5 cr)
  or GNAG 3899 - Pre-Internship Seminar (0.5 cr)

• Internship
Take 2 or more credit(s) from the following:
• GNAG 3900 - Internship (0.5 - 3.0 cr)

• Post-Internship Seminar
• GNAG 3901 - Post Internship Seminar (0.5 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses. Take 7 or more course(s) totaling 22 or more credit(s) from the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
If applicable, the course taken from below may be used to satisfy both the program and technology requirements. Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• AGEC 2310 - Agribusiness Financial Records (3.0 cr)
  AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)
  CA 1xxx
  CA 2xxx

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

Animal Science
This emphasis leads graduates to careers within the livestock industry, such as production and management, feed production, artificial insemination, livestock and farm equipment support/sales, pharmaceutical sales, and veterinary technician. Students are exposed to classroom instruction and hands-on experiential learning in the laboratory. Coursework includes computer and communications training, sales training, and business management. Other required coursework is traditional to livestock degrees and may include nutrition, breeding, reproduction, evaluation, feeds, production and management, and facilities. Students can take courses specific to their interest.

Take 6 - 7 course(s) totaling exactly 18 credit(s) from the following:
• AGEC 3540 - Farm Business Management (3.0 cr)
• AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
• ANSC 1201 - Advanced Animal Evaluation (1.0 cr)
• CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
• Choose one of the following:
  CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
  or CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
  CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
• Choose one of the following:
  • GNAG 2203 - Ag Products and Processing (3.0 cr)
  or GNAG 2204 - International Agriculture Production, Processing and Marketing (3.0 cr)
  or GNAG 3203 - Ag Products and Processing (3.0 cr)
  or GNAG 3204 - International Agricultural Production, Processing, and Marketing (3.0 cr)

Agriculture Electives
Students must complete enough credits of agriculture electives (selected in consultation with their advisor) to meet the 120 credit
graduation requirement. Number of credits needed will depend on LE course selections.

**Pre-Veterinary Medicine**

The pre-veterinary medicine emphasis meets the course entry requirements for admission to the University of Minnesota College of Veterinary Medicine; however, similar entry requirements among colleges of veterinary medicine, coupled with sufficient flexibility within the curriculum, allow graduates to meet the admission requirements for many other institutions. Students who graduate are well prepared to pursue their career goal of becoming a veterinarian. Students are exposed to traditional classroom instruction, as well as hands-on/experiential learning in the laboratory.

**Pre-Veterinary Medicine**

Take exactly 10 course(s) totaling exactly 28 credit(s) from the following:

- **BIOL 2012** - General Zoology (4.0 cr)
- **CHEM 1061** - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
- **CHEM 1062** - Chemical Principles II (3.0 cr)
- **CHEM 1065** - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
- **CHEM 1066** - Chemical Principles II Laboratory (1.0 cr)
- **CHEM 2301** - Organic Chemistry I (3.0 cr)
- **CHEM 2310** - Organic Chemistry Laboratory I (2.0 cr)
- **CHEM 3021** - Biochemistry (3.0 cr)
- **PHYS 1101** - Introductory College Physics I [PHYS SCI] (4.0 cr)
- **PHYS 1102** - Introductory College Physics II [PHYS SCI] (4.0 cr)

**Agriculture Electives**

Students must complete enough agriculture electives credits to meet the 124 credit graduation requirement. Number of credits needed will depend on LE course selections.

**Northland Community and Technical College Dual Enrollment**

This sub-plan is optional and does not fulfill the sub-plan requirement for this program.
**Minor Requirements**

**Animal Science Minor**

Take exactly 8 course(s) totaling 25 - 26 credit(s) from the following:

- ANSC 1101 - Animal Evaluation (1.0 cr)
- ANSC 1206 - Sheep and Swine Production Techniques (2.0 cr)
- ANSC 2104 - Feeds and Feeding (4.0 cr)
- ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
- ANSC 3304 - Reproduction, AI, and Lactation (4.0 cr)
- ANSC 3503 - Animal Health and Disease (3.0 cr)

Choose one of the following:

- ANSC 3204 - Dairy Production (4.0 cr)
- ANSC 3303 - Beef Production (4.0 cr)
Crookston Campus  
Applied Agricultural Communication Studies B.S.  
Humanities, Social Sciences, and Education  

Academic Affairs

- Program Type: Baccalaureate  
- Requirements for this program are current for Fall 2021  
- Required credits to graduate with this degree: 120  
- Required credits within the major: 37  
- Degree: Bachelor of Science

The B.S. in Applied Agricultural Communication Studies prepares students to be effective communicators for agribusinesses, commodity groups, agricultural advocacy agencies, and agricultural communication organizations. Applied agricultural communication studies graduates may hold jobs as Public Relations Specialists, Agricultural Lobbyists, Agriculture Journalists, Agricultural Literacy and Advocacy Specialists, Communication Specialists, and Event Planners. The program provides transferable skills by emphasizing communication theory and practice in the creation, development, presentation, and evaluation of coherent messages. Students use communication strategies to create publications (newsletters, brochures, flyers, news releases, communication plans), plan events, and manage projects. The program blends agriculture, communication, and general education courses while maximizing flexibility to allow students to choose electives to fit their career interests and expectations.

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

Students must complete an A.A.S in an agricultural field or 30 credits of agricultural coursework before enrolling in this degree program. Agricultural credits can include the following: AGEC, AGED, AGRO, ANSC, ASM, EQSC, GNAG, HORT, NATR, SOIL, SWM, or TURF.

All students must complete 40 upper division credits, meet the liberal education requirements, along with the program required classes.

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

Required prerequisites

A.A.S. in Agricultural Field or 30 credits of specific coursework

Students must complete an A.A.S in an agricultural field or 30 credits of agricultural coursework before enrolling in this degree program. Agricultural credits can include the following: AGEC, AGED, AGRO, ANSC, ASM, EQSC, GNAG, HORT, NATR, SOIL, SWM, or TURF.

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements

Applied Agricultural Communication Core

Take 9 or more course(s) totaling 25 or more credit(s) from the following:
- COMM 3000 - Communication Theory (3.0 cr)  
- COMM 3431 - Persuasion (3.0 cr)  
- COMM 3704 - Business and Professional Speaking (3.0 cr)  
- COMM 4000 - News and Social Media Communication (3.0 cr)  
- COMM 4704 - Organizational Communication (3.0 cr)  
- GBUS 1005 - Orientation to Online Learning (1.0 cr)  
  or APLS 3001 - Individual Program Development (1.0 cr)  
- COMM 4007 - Political Communication (3.0 cr)  
  or COMM 4800 - Crisis Communication (3.0 cr)  
- COMM 3710 - Event Planning and Management (3.0 cr)  
  or COMM 4900 - Public Relations (3.0 cr)
- Internship
Take 3 or more credit(s) from the following:
• GNAG 3900 - Internship (0.5 - 3.0 cr)

Communication Electives
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
• COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
• COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
• COMM 3008 - Business Writing (3.0 cr)
• COMM 3100 - Research Fundamentals (3.0 cr)
• COMM 3537 - Visual Communication (3.0 cr)
• COMM 3710 - Event Planning and Management (3.0 cr)
• COMM 3857 - Technical Communication (3.0 cr)
• COMM 4802 - Publication Design and Management (3.0 cr)
• COMM 4850 - Report Writing (3.0 cr)
• WRIT 2110 - Digital Writing (3.0 cr)
• WRIT 2223 - English Grammar and Usage (3.0 cr)
• WRIT 3303 - Writing in Your Profession (3.0 cr)
• WRIT 3856 - Editing (3.0 cr)

Liberal Education
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
• COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)

Technology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• COMM 2110 - Communication Technology Trends (3.0 cr)

Open Electives
Students must take enough open electives credits to meet the 120 credit graduation requirement.

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

Online
The online Applied Agricultural Communication Studies B.S. program has the same curriculum as the on-campus program.
Crookston Campus
Applied Health B.S.
Math, Science and Technology
Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 61 to 63
• Degree: Bachelor of Science

The Bachelor of Science of Applied Health (BSAH) is an integrated four-year baccalaureate degree program delivered via distance education. The program includes a liberal education core curriculum, clinical occupational field, and management component. The curriculum combines the knowledge and experiences necessary to provide leadership in the changing health care arena and in entrepreneurial health care settings where clinical expertise is valued. Program outcomes:

Communicate effectively through written response statements and academic writing assignments that reflect a level of professionalism expected in the healthcare field.
Describe the financial and reimbursement mechanisms of the United States health care system and how this affects administrative and management decisions.
Demonstrate leadership skills to effectively lead organization, department, and workgroup units to meet organizational goals in a variety of healthcare environments.
Utilize technology as a professional tool to communicate, organize, collect data, develop strategy, and drive organizational change.
Describe the basic concepts of legal, ethical, economic, and regulatory dimensions of health care and public health policy.
Contrast and compare quality improvement processes and use a variety of quality tools and measures, to analyze and formulate an approach to improving patient-centered care.

Program Delivery
This program is available:
• completely online (all program coursework can be completed online)

Admission Requirements
Students must complete an A.A.S Degree before enrolling in this program. Students will be able to transfer up to 38 clinical credits from their Radiologic Technician, Physical Therapy Assistant, Occupational Assistant, or Respiratory Therapy coursework if the student has an active practice license in their profession. An articulation agreement must be in place between the students 2-year school and the University of Minnesota Crookston prior to accepting the 38 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. For more information, see the graduation requirements.

Program Requirements
Students must complete 24 upper-division credits. A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Core
Take the following 8 courses totaling 23 or more credits:

GBUS 1005 - Orientation to Online Learning (1.0 cr)
HI 3020 - Introduction to Health Information Systems (3.0 cr)
HSM 3200 - Health Care Leadership and Planning (4.0 cr)
HSM 3240 - Health Care Policy and Comparative Systems (4.0 cr)
HSM 3250 - Performance Improvement in Health Care (3.0 cr)
HSM 4210 - Health Care Law and Biomedical Ethics (4.0 cr)
HSM 4212 - Regulatory Management (3.0 cr)

Internship
Take 1 - 3 credit(s) from the following:
HSM 3900 - Internship (1.0 - 5.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses. Take 4 courses totaling 12 or more credits from the following:
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
  or
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)

Technology
The course taken from below may be used to satisfy both the program and technology requirements.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- HI 3020 - Introduction to Health Information Systems (3.0 cr)

Occupational Courses
Take 38 credits of occupational courses from partner schools, selected in consultation with an adviser. An academic agreement must exist between the 2-year college and the University of Minnesota Crookston prior to acceptance to this program.

Open Electives
Students must take enough open elective credits to meet the 120 credit graduation requirement.

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

Online
Crookston Campus
Applied Studies B.S.
Humanities, Social Sciences, and Education
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 51
- Degree: Bachelor of Science

The applied studies program addresses the needs of individuals whose educational objectives cannot be met through traditional degree programs. It provides a professionally accommodating entry point for students with previous educational and technical competencies to develop an individualized bachelor of science degree. Students are not allowed to complete this major if they have previously earned a baccalaureate degree or are currently pursuing a baccalaureate degree.

Program outcomes:
- Complete an individually tailored course of study that builds upon prior education and experience
- Demonstrate technical competencies in selected areas of study in an internship setting
- Demonstrate skills in communication, problem solving, and working with others in a capstone experience
- Meet career development goals related to achieving a baccalaureate degree

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
Students must complete 60 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. For more information, see the graduation requirements.

Program Requirements
Students develop a program of study selected to meet career goals. A specific program track in respiratory care is also available.

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- Choose one of the following:
  - COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
  - COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
Students must take 3 credits of any Computer Application (CA) Courses.
CA 1xxx
Applied Studies Options
Students either design a program with two fields of study, in consultation with an advisor, or they complete the respiratory care requirements.

Self-Designed Program
Students complete at least two areas of study, with at least one area having an occupational direction. Technical courses taken at a technical college may be used to complete one area of study. All courses must be selected in consultation with an advisor.

APLS 3001 - Individual Program Development (1.0 cr)
APLS 3900 - Internship/Field Experience (1.0 - 3.0 cr)
APLS 4652 - Applied Studies Seminar (2.0 cr)

First Area of Study
First area of study courses must be technical or occupational.
Take 27 or more credit(s) from the following:
• First Area of Study Course

Second Area of Study
Second area of study courses can be selected across the curriculum to meet specific career objectives.
Take 18 or more credit(s) from the following:
• Second Area of Study Course

Open Electives
Students must take enough open electives credits to meet the 120 credit requirement for graduation.

-OR-

Respiratory Care
Complete the requirements in the respiratory care sub-plan.

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

Online
The applied studies bachelor of science program is available online. Its requirements are identical with those of the on-campus bachelor of science program.

Online
Requirements are identical with those of the on-campus bachelor of science program.

Respiratory Care
Respiratory care program outcomes:
Demonstrate respiratory care competencies in clinical settings as appropriate for certification in respiratory care
Demonstrate skills in communication, problem solving, and working with others in an appropriate capstone experience
Meet career development goals related to achieving a baccalaureate degree

Courses taken at Northland Community and Technical College, East Grand Forks, will be transferred in to complete the first area (23 credits) and second area (31 credits) of study.

Liberal Education
Respiratory Care Emphasis requires the additional Liberal Education courses:
Take exactly 3 course(s) totaling exactly 11 credit(s) from the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
• PHIL 1001 - Introduction to Philosophy [HUMANITIES, ETH/CIV RE] (3.0 cr)

First Area of Study
Courses taken at Northland Community and Technical College.
Take exactly 7 course(s) totaling exactly 23 credit(s) from the following:
• NCTC - BIOL 2221
• NCTC - BIOL 2252
• NCTC - BIOL 2254
• NCTC - RESP 1104
• NCTC - RESP 1110
• NCTC - RESP 1120

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Information current as of August 09, 2021
Second Area of Study
Courses taken at Northland Community and Technical College.
Take exactly 9 course(s) totaling exactly 31 credit(s) from the following:
• NCTC - RESP 2206
• NCTC - RESP 2212
• NCTC - RESP 2242
• NCTC - RESP 2248
• NCTC - RESP 2252
• NCTC - RESP 2258
• NCTC - RESP 2262
• NCTC - RESP 2266
• NCTC - RESP 2276

Open Electives
Students must take enough open electives credits to meet the 120 credit requirement for graduation.
**Crookston Campus**

**Biology B.S.**

*Math, Science and Technology*

**Academic Affairs**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 83 to 86
- This program requires summer terms.
- Degree: Bachelor of Science

The BS in biology provides students with a broad knowledge of the biological sciences while introducing them to the practical skills needed in today's biotech industries and the background required to be successful applicants to graduate programs. Students may choose from advanced courses designed to emphasize studies in either animal or plant systems while participating in a common core of courses which provide knowledge in the basic principles relevant to both areas.

Program outcomes for graduates:
- Explain and reconstruct the scientific method and can apply this mode of inquiry in a laboratory setting
- Explain and apply basic principles of biology in work setting
- Demonstrate teamwork skills
- Apply, critique, and synthesize protocols from current literature
- Demonstrate and critique effective oral and written communication skills
- Formulate proper data collection and analysis methods
- Interpret and practice professional and ethical behavior related to biological research
- Identify, provide examples, differentiate, and integrate current biology techniques into their scientific investigations

**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. For more information, see the [graduation requirements](#).

**Program Requirements**

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

**Biology Core**

Take exactly 14 course(s) totaling 37 - 38 credit(s) from the following:

- BIOL 1805 - Nature of Life (2.0 cr)
- BIOL 2032 - General Microbiology (4.0 cr)
- BIOL 3022 - Principles of Genetics (3.0 cr)
- BIOL 3027 - Cell Biology (3.0 cr)
- BIOL 3122 - Evolution (3.0 cr)
- BIOL 3822 - Techniques in Molecular Biology (4.0 cr)
- BIOL 4101 - Biology Seminar (1.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)

Choose one of the following:

- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• Choose one of the following:
  • BIOL 2012 - General Zoology (4.0 cr)
  or BIOL 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)

**Pre-Internship Seminar**
  BIOL 3899 - Pre-Internship Seminar (0.5 cr)

**Internship**
Take exactly 2 credit(s) from the following:
  • BIOL 3900 - Internship (1.0 - 2.0 cr)

**Post-Internship Seminar**
  BIOL 3901 - Post-Internship Seminar (0.5 cr)

**Chemistry Core**
Take exactly 9 course(s) totaling exactly 21 credit(s) from the following:
  • CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
  • CHEM 1062 - Chemical Principles II (3.0 cr)
  • CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
  • CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
  • CHEM 2301 - Organic Chemistry I (3.0 cr)
  • CHEM 2302 - Organic Chemistry II (3.0 cr)
  • CHEM 2310 - Organic Chemistry Laboratory I (2.0 cr)
  • CHEM 2311 - Organic Chemistry Laboratory II (2.0 cr)
  • CHEM 3021 - Biochemistry (3.0 cr)

**Math and Physics Core**
Take exactly 4 course(s) totaling exactly 15 credit(s) from the following:
  • MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
  • MATH 1271 - Calculus I [MATH THINK] (4.0 cr)
  • PHYS 1101 - Introductory College Physics I [PHYS SCI] (4.0 cr)
  • PHYS 1102 - Introductory College Physics II [PHYS SCI] (4.0 cr)

**Biology Electives**
Take 10 - 12 credit(s) from the following:
  • AGRO 3030 - Research Techniques in Agriculture and Natural Resources (3.0 cr)
  • AGRO 3230 - Introduction to Plant Pathology (3.0 cr)
  • ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
  • ANSC 3304 - Reproduction, AI, and Lactation (4.0 cr)
  • BIOL 2103 - Human Anatomy and Physiology I (4.0 cr)
  • BIOL 2104 - Human Anatomy and Physiology II (4.0 cr)
  • BIOL 3140 - Histology (4.0 cr)
  • BIOL 3464 - Mammalogy (3.0 cr)
  • BIOL 3466 - Ornithology (3.0 cr)
  • BIOL 3722 - Limnology (3.0 cr)
  • BIOL 3994 - Undergraduate Research (1.0 - 4.0 cr)
  • BIOL 4361 - Developmental Biology (4.0 cr)
  • GEOL 1001 - Introductory Geology [PHYS SCI, PEOPLE/ENV] (4.0 cr)
  • HSCI 1123 - Fundamentals of Nutrition [BIOL SCI] (3.0 cr)
  • MATH 1272 - Calculus II (4.0 cr)
  • NATR 3364 - Plant Taxonomy (3.0 cr)
  • SOIL 1293 - Soil Science (3.0 cr)
  • AGRO 2573 - Entomology (3.0 cr)
  or NATR 2573 - Entomology (3.0 cr)

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
  • COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
  • COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
  • COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

**Technology**
If applicable, the course selected from below may be used to satisfy both the program and technology requirements.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
  • CA 1xxx
• CA 2xxx
• CHEM 3022 - Chemical Analysis in the Biological and Environmental Sciences (4.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough open electives credits to meet the 120 credit graduation requirement.
Program Delivery
This program is available:
• via classroom (the majority of instruction is face-to-face)

Minor Requirements
Biology Minor Requirements
Take exactly 6 course(s) totaling 20 - 21 credit(s) from the following:
• BIOL 3022 - Principles of Genetics (3.0 cr)
• BIOL 3027 - Cell Biology (3.0 cr)
• BIOL 3122 - Evolution (3.0 cr)
• NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
  or BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• BIOL 2012 - General Zoology (4.0 cr)
  or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)
Crookston Campus
Chemistry Minor
Math, Science and Technology

Academic Affairs

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 25

Chemistry is the central science that plays an unparalleled role in our society. It helps us understand the world at the molecular level. A minor in chemistry opens up opportunities in diverse fields such as medicine, forensic science, clinical laboratory science, environmental chemistry, and biotechnology.

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

Minor Requirements
Chemistry Minor Requirements
Take exactly 10 course(s) totaling exactly 25 credit(s) from the following:
• CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
• CHEM 1062 - Chemical Principles II (3.0 cr)
• CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 2302 - Organic Chemistry II (3.0 cr)
• CHEM 2310 - Organic Chemistry Laboratory I (2.0 cr)
• CHEM 2311 - Organic Chemistry Laboratory II (2.0 cr)
• Choose one of the following:
  • CHEM 3022 - Chemical Analysis in the Biological and Environmental Sciences (4.0 cr)
  or ENSC 3720 - Fate of Chemicals in the Environment (4.0 cr)
• Choose one of the following:
  • CHEM 3021 - Biochemistry (3.0 cr)
  or Take 3 or more credit(s) from the following:
  • CHEM 3994 - Undergraduate Research in Chemistry (1.0 - 4.0 cr)
**Crookston Campus**

**Coaching Minor**

*Business*

**Academic Affairs**

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 21

The coaching minor develops future coaches by teaching current theories and practices in coaching and with practical experience through the coaching practicum. This helps to prepare students for coaching at the youth, elementary, high school, college, or even professional levels. The minor can be taken by students in any major and has a requirement of 21 credits.

Since 1997, Minnesota has not required a teaching or coaching license to coach high school athletics. The coaching minor helps train and develop future coaches in the areas of practice planning, skill development, and coaching strategies in their sport of interest. In addition, it gives those students interested in coaching more marketability for coaching positions.

Any student, regardless of major, can earn a coaching minor.

**Program Delivery**

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

**Minor Requirements**

**Coaching Minor Requirements**

Take exactly 8 course(s) totaling exactly 19 credit(s) from the following:

- BIOL 2103 - Human Anatomy and Physiology I (4.0 cr)
- HLTH 1062 - First Aid and CPR (2.0 cr)
- SRM 2000 - Prevention and Care of Athletic Injuries (3.0 cr)
- SRM 2010 - Topics in Coaching (2.0 cr)
- SRM 3020 - Coaching Practicum (1.0 cr)
- SRM 3320 - Applied Sports Physiology (3.0 cr)
- SRM 3008 - Sport Ethics and Leadership (3.0 cr)
- HSCI 3050 - Sport Nutrition (3.0 cr)
- or SRM 3008 - Sport Ethics and Leadership (3.0 cr)
- SRM 3100 - Psychology of Sport (3.0 cr)
- or SRM 3200 - Socio-Cultural Dimensions in Sport (3.0 cr)
Crookston Campus
Communication B.S.
*Humanities, Social Sciences, and Education*

**Academic Affairs**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 63 to 64
- Degree: Bachelor of Science

The BS in communication prepares students to be effective communicators in professional settings. Graduates are prepared for advanced study or to enter careers in general corporate management, human resources, marketing, public relations, social media, and sports information. Graduates may also hold jobs as communication consultants, communication directors, event planners, political campaign leaders, public affairs officers, public information officers, publication designers and editors, speech writers, and online and social media content managers.

The program provides transferable skills by emphasizing communication theory and practice in the creation, development, presentation, and evaluation of coherent messages. Students use communication strategies to create publications, design online resources, plan events, and manage projects. The concentration areas let students select courses to focus their professional career preparation.

Program outcomes for graduates:
- demonstrate proficiencies in applying theory, listening, reading, speaking, and writing in professional contexts
- demonstrate technology proficiencies in computer applications and social media
- demonstrate critical thinking and problem-solving skills, including analyzing, interpreting, and evaluating applied communication
- demonstrate proficiencies in interpersonal and group processes, conflict management, collaboration, team building, and leadership
- demonstrate understanding of the ethical behavior practiced in professional contexts
- demonstrate awareness and sensitivity required for communicating in culturally diverse groups

**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**
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. For more information, see the [graduation requirements](http://www.grad.umn.edu/admissions/requirements).

**Program Requirements**
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

**Communication Core**
Take 8 or more course(s) totaling 24 or more credit(s) from the following:
- COMM 3000 - Communication Theory (3.0 cr)
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- COMM 3100 - Research Fundamentals (3.0 cr)
- COMM 3431 - Persuasion (3.0 cr)
- COMM 3704 - Business and Professional Speaking (3.0 cr)
- COMM 3900 - Internship (3.0 cr)
- COMM 4000 - News and Social Media Communication (3.0 cr)
- COMM 4704 - Organizational Communication (3.0 cr)
Communication Electives
Take 12 or more credit(s) from the following:
• COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
• COMM 2334 - Communication Topics (3.0 cr)
• COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
• COMM 3008 - Business Writing (3.0 cr)
• COMM 3537 - Visual Communication (3.0 cr)
• COMM 3610 - Corporate Training (3.0 cr)
• COMM 3710 - Event Planning and Management (3.0 cr)
• COMM 3804 - Individual Studies (1.0 - 3.0 cr)
• COMM 3855 - Topics in Communication (3.0 cr)
• COMM 4007 - Political Communication (3.0 cr)
• COMM 4800 - Crisis Communication (3.0 cr)
• COMM 4802 - Publication Design and Management (3.0 cr)
• COMM 4850 - Report Writing (3.0 cr)
• COMM 4900 - Public Relations (3.0 cr)
• TH 2434 - Oral Interpretation and Performance Techniques [HUMANITIES] (3.0 cr)
• WRIT 2223 - English Grammar and Usage (3.0 cr)
• WRIT 2335 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)
• WRIT 3303 - Writing in Your Profession (3.0 cr)
• WRIT 3856 - Editing (3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
COMM 2110 Communication Technology Trends is required.
COMM 2110 can be used to satisfy both the program and technology requirement.

Open Electives
Students must take enough open elective credits to satisfy the 120 credit graduation requirement.

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

Communication Studies
The focus of this emphasis area is the theory, practice, and critique of communication. This area can be conceived as a broad based study or as an applied and career oriented learning program. This area allows students to craft a personalized concentration of courses; these courses can reflect all areas of the university or target specific career aspirations. These courses can be from outside the communication program curriculum for an interdisciplinary approach or from within the communication program. Communication with a concentration of courses in management, communication with a concentration of courses in marketing, or communication with a concentration of courses in sports management are examples. This area could also reflect a combination of courses from the organizational/public relations and writing plans.

Communication studies graduates find or create careers in all sectors of the economy. These professionals meet the communication needs of the businesses and industries in which they work. Communication Directors, Event Planners, and Sports Information Directors are examples. A minor representing a subject field would be an excellent supplement to the program in communication and/or to the personalized concentration of courses.

Emphasis Core
Courses to be chosen in consultation with the student's advisor.
Take 27 or more credit(s) from the following:
• Lower-division emphasis course
• Upper-Division
At least 9 credits of Communication Studies Emphasis Core courses must be upper-division.
Take 9 or more credit(s) from the following:
• Upper-division emphasis course
Organization Communication/Public Relations
The focus of this emphasis area is communication within organizations and communication with public constituencies. Conflict management, group and team dynamics, and leadership are key areas of study, as well as research, audience analysis, strategic design, implementation, and message evaluation. This area addresses internal organizational power and politics, as well as making effective connections with the public. It deals with the daily internal organizational communication that socializes employees, the strategic external communication that connects with the public, and the non-routine persuasive communication that needs to be used to effectively respond to a crisis.

Organizational communication/public relations graduates find or create careers in corporate communication, public relations, media relations, and other. These professionals meet the communication needs of the businesses and industries in which they work. Minors in business management and marketing are excellent supplements to the program in communication with this emphasis area.

Emphasis Core
Take 5 or more course(s) totaling 15 or more credit(s) from the following:
- COMM 3008 - Business Writing (3.0 cr)
- COMM 4802 - Publication Design and Management (3.0 cr)
- COMM 4900 - Public Relations (3.0 cr)
Choose one of the following. The course selected will not also satisfy an emphasis electives requirement.
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
- COMM 3710 - Event Planning and Management (3.0 cr)
Choose one of the following. The course selected will not also satisfy an emphasis electives requirement.
- COMM 4007 - Political Communication (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)

Emphasis Electives
Take 12 or more credit(s) from the following:
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
- COMM 3008 - Intercultural Communication [GLOB PERSP] (3.0 cr)
- COMM 3537 - Visual Communication (3.0 cr)
- COMM 3710 - Event Planning and Management (3.0 cr)
- COMM 4007 - Political Communication (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)
- COMM 4850 - Report Writing (3.0 cr)
- MKTG 3230 - Digital Marketing (3.0 cr)
- MKTG 3250 - Integrated Marketing Communication (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- WRIT 2335 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)
- WRIT 3856 - Editing (3.0 cr)

Social Media
The focus of this emphasis area is social media. A solid core in news and social media communication, visual communication, publication design and management, communication technology trends, and digital writing lead to applications in managing and creating content for social media. This area addresses the theory and practice of the craft. Communication professionals find or create careers as social media managers; public relations professionals; and advertising, marketing, and political campaign leaders across all fields of business and industry. A minor representing a subject field would be an excellent supplement to the program in communication with this emphasis area.

Core
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- COMM 2110 - Communication Technology Trends (3.0 cr)
- COMM 3537 - Visual Communication (3.0 cr)
- COMM 4802 - Publication Design and Management (3.0 cr)
- WRIT 2110 - Digital Writing (3.0 cr)

Electives
Take 15 or more credit(s) from the following:
- COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
- COMM 3008 - Business Writing (3.0 cr)
- COMM 3710 - Event Planning and Management (3.0 cr)
- COMM 4007 - Political Communication (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)
- COMM 4850 - Report Writing (3.0 cr)
- COMM 4900 - Public Relations (3.0 cr)
- MKTG 3230 - Digital Marketing (3.0 cr)
- MKTG 3250 - Integrated Marketing Communication (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
• SRM 3006 - Sport Marketing and Communication (3.0 cr)
• WRIT 3856 - Editing (3.0 cr)

Online
This sub-plan is optional and does not fulfill the sub-plan requirement for this program.

The BS in communication prepares students to be effective communicators in professional settings. Graduates are prepared for advanced study or to enter careers in general corporate management, human resources, marketing, public relations, social media, and sports information. Graduates may also hold jobs as communication consultants, communication directors, event planners, political campaign leaders, public affairs officers, public information officers, publication designers and editors, speech writers, and online and social media content managers.

The program provides transferable skills by emphasizing communication theory and practice in the creation, development, presentation, and evaluation of coherent messages. Students use communication strategies to create publications, design online resources, plan events, and manage projects.

The concentration areas let students select courses to focus their professional career preparation.

The communication online BS program has the same curriculum as the on-campus program. The only difference is that the online program has an additional one credit technology requirement. To offset this 1-credit requirement, students take one less credit of electives. As with the on-campus program, online students will need to choose one of the three available sub-plans of the communication BS program (communication studies, organization communication/public relations, or writing).

Technology
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus
Communication Minor
Humanities, Social Sciences, and Education
Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 19

The communication minor complements all UMC degree programs by preparing students to be effective communicators in any profession. The minor emphasizes communication theory and practice, as well as the creation, development, presentation, and evaluation of coherent messages.

The minor provides students with the flexibility to select courses that enhance their professional career preparations.

Program outcomes: students will:
- Demonstrate proficiencies in applying theory, listening, reading, speaking, and writing in the profession
- Demonstrate critical thinking and problem solving skills, including analyzing, interpreting, and evaluating applied communication
- Demonstrate proficiencies in interpersonal and group processes, conflict management, collaboration, team building, and leadership
- Demonstrate understanding of the ethical behavior practiced in the profession
- Demonstrate awareness and sensitivity required for communicating in culturally diverse groups

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

Minor Requirements
Communication Core
Take 4 or more course(s) totaling 12 or more credit(s) from the following:
- COMM 3000 · Communication Theory (3.0 cr)
- COMM 3001 · Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- COMM 3704 · Business and Professional Speaking (3.0 cr)
- COMM 4000 · News and Social Media Communication (3.0 cr)

Communication Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- COMM 2002 · Interpersonal Communication [COMMUNICAT] (3.0 cr)
- COMM 2110 · Communication Technology Trends (3.0 cr)
- COMM 2334 · Communication Topics (3.0 cr)
- COMM 3002 · Intercultural Communication [GLOB PERSP] (3.0 cr)
- COMM 3008 · Business Writing (3.0 cr)
- COMM 3100 · Research Fundamentals (3.0 cr)
- COMM 3431 · Persuasion (3.0 cr)
- COMM 3537 · Visual Communication (3.0 cr)
- COMM 3610 · Corporate Training (3.0 cr)
- COMM 3710 · Event Planning and Management (3.0 cr)
- COMM 3804 · Individual Studies (1.0 - 3.0 cr)
- COMM 3855 · Topics in Communication (3.0 cr)
- COMM 3900 · Internship (3.0 cr)
- COMM 4007 · Political Communication (3.0 cr)
- COMM 4704 · Organizational Communication (3.0 cr)
- COMM 4800 · Crisis Communication (3.0 cr)
- COMM 4802 · Publication Design and Management (3.0 cr)
- COMM 4850 · Report Writing (3.0 cr)
- COMM 4900 · Public Relations (3.0 cr)
- TH 2434 · Oral Interpretation and Performance Techniques [HUMANITIES] (3.0 cr)
- WRIT 2223 · English Grammar and Usage (3.0 cr)
- WRIT 2335 · Introduction to Creative Writing [HUMANITIES] (3.0 cr)
- WRIT 3303 · Writing in Your Profession (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Online
The Communication Minor complements all UMC degree programs by preparing students to be effective communicators in any profession. The minor emphasizes communication theory and practice as well as the creation, development, presentation, and evaluation of coherent messages.

The Communication Minor Online has the same curriculum as the on-campus Communication Minor with the exception of a one-credit technology requirement.

Technology
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus
Criminal Justice B.S.
Humanities, Social Sciences, and Education

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 53 to 59
- This program requires summer terms.
- Degree: Bachelor of Science

The career-oriented bachelor of science in criminal justice degree at the University of Minnesota Crookston is designed for students interested in a professional career in the rapidly expanding criminal justice field. The program has an interdisciplinary criminal justice curriculum that provides students the opportunity to incorporate learning that is identified by employers as being critical to career success. The program provides high quality education in both academic and professional areas, offers unique training and internship experiences, a positive entry-level employment outlook among criminal justice agencies, and an academic platform to continue graduate training in fields such as political science, law, public administration, criminal justice/criminology, psychology, and social work.

Criminal justice majors choose either a law enforcement or corrections emphasis. Both emphases include elective credits that allow students to choose courses of specific interest. Students who complete the law enforcement emphasis and approved skills training will be eligible to take the state board exam to become a licensed police officer.

Program outcomes:
- Demonstrate a comprehensive understanding and knowledge of the criminal justice system, juvenile justice system, public administration/policy, criminal behavior, law, criminal justice issues, and criminology.
- Identify the ethical issues inherent in criminal justice.
- Demonstrate proficiencies in policing philosophies, including analyzing, understanding, and evaluating criminal evidence, investigation, and surveillance techniques.
- Explain correctional philosophies and understand the historical and current dilemmas in corrections.
- Discuss the concepts of due process of law, criminal procedure, defendant's rights, victim's rights, and constitutional rights.
- Describe programs and services that are effective for combating crime.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Criminal Justice Core
Take exactly 11 course(s) totaling exactly 35 credit(s) from the following:
- CRJS 1500 - Introduction to Criminal Justice [HI/BEH/SSC, ETH/CIV RE] (4.0 cr)
- CRJS 2100 - Crime and Criminology (3.0 cr)
- CRJS 2400 - Introduction to Corrections (3.0 cr)
- CRJS 2500 - Introduction to Policing (3.0 cr)
- CRJS 3350 - Criminal Justice Administration (3.0 cr)
• CRJS 3505 - Judicial Process (3.0 cr)
• CRJS 3515 - Criminal Justice Ethics (3.0 cr)
• CRJS 3525 - Juvenile Justice and Delinquency (3.0 cr)
• CRJS 3530 - Criminal Justice Diversity (3.0 cr)
• CRJS 3900 - Criminal Justice Field Placement (Internship) (3.0 cr)
• CRJS 4540 - Criminal Law (4.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum.

Take exactly 4 course(s) from the following:
The following are specific required liberal education courses.
Take exactly 4 course(s) totaling exactly 13 credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• POL 1001 - American Government [ETH/CIV RE] (4.0 cr)
• Choose one of the following:
  • COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
  • COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

• Recommended Liberal Education
The following are recommended liberal education courses.
Take 0 or more credit(s) from the following:
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
• PSY 3604 - Abnormal Psychology (3.0 cr)
• SOC 1001 - Introduction to Sociology [HI/BEH/SSC, HUMAN DIV] (3.0 cr)

Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CA 1xxx
• CA 2xxx
• NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)

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

Corrections
Students can complete the corrections emphasis to better prepare themselves in the field of adult and juvenile corrections.

The Criminal Justice BS with an emphasis in Corrections requires a minimum of 53 credits within the major.

Corrections Core
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
• CRJS 3455 - Institutional Corrections (3.0 cr)
• CRJS 3465 - Strategies in Correctional Rehabilitation (3.0 cr)
• CRJS 3475 - Community Corrections (3.0 cr)
• CRJS 4435 - Theories of Punishment (3.0 cr)

Corrections Electives
Take 6 or more credit(s) from the following:
• CRJS 1803 - Directed Studies (1.0 - 15.0 cr)
• CRJS 2390 - Special Topics in Criminal Justice (1.0 - 3.0 cr)
• CRJS 2550 - Traffic Law (2.0 cr)
• CRJS 2560 - Emergency Medical Responder (3.0 cr)
• CRJS 3350 - Criminal Justice Administration (3.0 cr)
• CRJS 3520 - Natural Resource Law Enforcement Techniques (3.0 cr)
• CRJS 3550 - Criminal Investigation (3.0 cr)
• CRJS 3575 - Critical Issues in Policing (3.0 cr)
• CRJS 3804 - Individual Studies (1.0 - 3.0 cr)
• CRJS 4315 - Women and Crime (3.0 cr)
• CRJS 4390 - Special Topics in Criminal Justice (1.0 - 3.0 cr)
• CRJS 4510 - Victimology (3.0 cr)
• CRJS 4550 - Criminal Procedure (4.0 cr)
• MGMT 3210 - Supervision and Leadership (3.0 cr)
Open Electives
Students must complete enough open elective credits to meet the 120 credit graduation requirement.

Law Enforcement
Students can complete the academic requirements needed for Peace Officer Standards & Training in order to become a law enforcement officer in Minnesota.

The Criminal Justice BS with an emphasis in Law Enforcement requires a minimum of 59 credits within the major.

Law Enforcement Core
Take exactly 18 credit(s) from the following:
- CRJS 2550 - Traffic Law (2.0 cr)
- CRJS 2560 - Emergency Medical Responder (3.0 cr)
- CRJS 3550 - Criminal Investigation (3.0 cr)
- CRJS 3575 - Critical Issues in Policing (3.0 cr)
- CRJS 4510 - Victimology (3.0 cr)
- CRJS 4550 - Criminal Procedure (4.0 cr)

Law Enforcement Electives
Take 6 or more credit(s) from the following:
- CRJS 1803 - Directed Studies (1.0 - 15.0 cr)
- CRJS 2390 - Special Topics in Criminal Justice (1.0 - 3.0 cr)
- CRJS 3350 - Criminal Justice Administration (3.0 cr)
- CRJS 3455 - Institutional Corrections (3.0 cr)
- CRJS 3465 - Strategies in Correctional Rehabilitation (3.0 cr)
- CRJS 3475 - Community Corrections (3.0 cr)
- CRJS 3520 - Natural Resource Law Enforcement Techniques (3.0 cr)
- CRJS 3804 - Individual Studies (1.0 - 3.0 cr)
- CRJS 4315 - Women and Crime (3.0 cr)
- CRJS 4390 - Special Topics in Criminal Justice (1.0 - 3.0 cr)
- CRJS 4435 - Theories of Punishment (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)

Open Electives
Students must complete enough open elective credits to meet the 120 credit graduation requirement.

Online
This sub-plan is optional and does not fulfill the sub-plan requirement for this program.

The online curriculum requirements are the same as on-campus curriculum requirements with the below exceptions:

*Technology Requirement
Take 3 credits from CA 1xxx or CA 2xxx
NATR 2630 is not available online

*The following courses are not available online under Corrections electives:
CRJS 1803 Directed Studies
CRJS 2390 Special Topics
CRJS 2560 Emergency Medical Responder

*The following courses are not available online under Law Enforcement electives:
CRJS 1803 Directed Studies
CRJS 2390 Special Topics

*The following course is not available online, therefore, is not required under Law Enforcement core. This emphasis will require 3 fewer credits within the major (from 59 to 56 credits):
CRJS 2560 Emergency Medical Responder (3 cr)
Crookston Campus
Criminal Justice Minor
Humanities, Social Sciences, and Education
Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 20

The minor in criminal justice provides an opportunity for students interested in obtaining a bachelors degree in a different field of study to take coursework to gain an understanding of the criminal justice system. The minor is designed to provide students with a broad overview of the criminal justice field by focusing on criminological theory, corrections, policing, juvenile justice issues, and criminal law.

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

Minor Requirements
Criminal Justice Minor Requirements
Take exactly 6 course(s) totaling exactly 20 credit(s) from the following:
- CRJS 1500 - Introduction to Criminal Justice [HI/BEH/SSC, ETH/CIV RE] (4.0 cr)
- CRJS 2100 - Crime and Criminology (3.0 cr)
- CRJS 2400 - Introduction to Corrections (3.0 cr)
- CRJS 2500 - Introduction to Policing (3.0 cr)
- CRJS 3525 - Juvenile Justice and Delinquency (3.0 cr)
- CRJS 4540 - Criminal Law (4.0 cr)
Crookston Campus
Cybersecurity & Information Assurance Minor
Math. Science and Technology

Academic Affairs

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 25

This minor is intended for students who are studying in a computer-related field (software engineering, information technology management). In addition, students from other programs with sufficient IT background will be able to enroll in this minor with the goal of enabling them to work in cyber security. The minor consists of courses designed to provide students with both the technical background and the hands-on experiences along with the theoretical background that gives them a competitive edge in cybersecurity jobs.

Program Delivery
This program is available:
• completely online (all program coursework can be completed online)

Minor Requirements
Core
Take 19 or more credit(s) from the following:
• GBUS 1005 - Orientation to Online Learning (1.0 cr)
• ITM 3110 - Microcomputer Operating Systems (3.0 cr)
• NT 3120 - Networking Standards and Protocols (3.0 cr)
• NT 3215 - Information Assurance and Systems Security (3.0 cr)
• SE 2100 - Microcomputer Systems Architecture (3.0 cr)
• SE 3250 - Cybercrime and Digital Forensics (3.0 cr)
• Take exactly 3 credit(s) from the following:
  • SE 2050 - Introduction to Programming I (3.0 cr)
  • SE 2070 - Introduction to Programming II (3.0 cr)

Electives
Take 6 or more credit(s) from the following:
• HI 3060 - Secure Data Collection and Retrieval (3.0 cr)
• HI 3215 - Health Information Assurance and Security (3.0 cr)
• SE 3510 - Topics in Cybersecurity and Information Assurance (3.0 cr)

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

Online
Required credits in this minor: 25
The curriculum requirements for the online minor are the same as the on-campus minor.
Crookston Campus

Early Childhood Education B.S.

Humanities, Social Sciences, and Education

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120 to 124
- Required credits within the major: 77 to 81
- Degree: Bachelor of Science

The BS degree in early childhood education is a career-oriented program that prepares students to earn their Minnesota teacher’s license, a professional licensure that allows teaching young children from birth through third grade.

Graduates of this teacher education program design, implement, and evaluate developmentally appropriate learning experiences for young children in a variety of early childhood settings. They are prepared to work collaboratively with families and in the community. Significant opportunities for professional positions exist in these educational programs: infant and toddler care and education, preschool programs, K-3 classrooms, Head Start, and early childhood family education.

This degree program has two areas of emphasis—primary education and program management.

Students who expect to apply for teacher licensure must complete the primary education emphasis. Graduates with the primary education emphasis demonstrate competencies as described in the MN Board of Teaching, Rules 8710.3000, Standard for Teachers of Early Childhood Education (ECE) and in MN Rules 8710.2000, Standards for Effective Practice for all Teachers. See program outcomes listed in the sub-plan descriptions below.

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

1. Earn a minimum GPA of 2.50 overall.

2. Take the Minnesota Teacher Licensure Examination (MTLE), Basic Skills tests.

3. Purchase personal Liability Insurance: can be obtained inexpensively through an annual student membership in Education Minnesota.

4. Successful completion of ED 2200, Foundations of Education.

5. Complete and submit Teacher Education Application Packet.

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

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

Students must maintain a minimum GPA of 2.50 throughout their enrollment in the program and must earn a C- or better in all program...
required courses plus ART 1xxx and ED 2100.

**Early Childhood Education Core**
Take 16 courses totaling 40.5 credits from the following:
- ECE 3410 - Learning Environments for Infants and Toddlers (4.0 cr)
- ECE 4440 - Infant and Toddler Student Teaching (3.0 cr)
- ECE 4700 - Creative Arts and Language Arts: Preprimary (4.0 cr)
- ECE 4702 - Mathematics, Social Studies, and Sciences: Preprimary (4.0 cr)
- ECE 4730 - Understanding and Supporting Parenting (3.0 cr)
- ED 2200 - Foundations of Education (3.0 cr)
- ED 2300 - Introduction to Early Childhood and Elementary Education (3.0 cr)
- ED 3000 - Cultural Immersion (1.0 cr)
- ED 3001 - Perspectives of Substance Use for Educators (1.0 cr)
- ED 3009 - Human Relations in Diversity (1.0 cr)
- ED 3010 - Child Guidance and Classroom Management (3.0 cr)
- ED 3110 - Educational Psychology (3.0 cr)
- ED 3500 - Introduction to Children with Special Needs (2.0 cr)
- ED 3901 - The Professional Teacher I (0.5 cr)
- ED 4500 - Teaching in Inclusive Learning Environments (2.0 cr)
- ED 4750 - Family, School, and Community Relations (3.0 cr)

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 6 or more course(s) totaling 19 or more credit(s) from the following:
- BIOL 1000 - Biology and Society [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ED 2100 - Child and Adolescent Development and Learning [HI/BEH/SSC] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
- •Art Elective
  - ART 1152 - Drawing and Design [HUMANITIES] (3.0 cr)
  - or ART 1252 - Painting and Design [HUMANITIES] (3.0 cr)
  - or ART 1352 - Pottery Design and Techniques [HUMANITIES] (3.0 cr)

**Technology**
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- •ED 2000 - Educational Technology for P-12th Settings (3.0 cr)

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

**Primary Education**
The primary education emphasis is for students who wish to teach in public school classrooms with kindergarten through third grade, as well as early childhood education programs for infants, toddlers, and preschoolers.

Program outcomes for graduates:
- promote child development/learning
- encourage infant/toddler development/learning
- facilitate preprimary-aged children's development/learning
- facilitate primary-aged children's development/learning
- assist in building family relationships
- document and assess to support young children
- become a reflective professional

The Early Childhood Education BS with an emphasis in Primary Education requires a minimum of 80.5 credits within the major. The Primary Education emphasis completes requirements for the Professional Educator Licensing and Standards Board (PELSB).

**Primary Education Core**
Take 9 or more course(s) totaling 23 or more credit(s) from the following:
- ECE 3420 - Nurturing and Collaborative Relationships for Infants and Toddlers (3.0 cr)
- ED 2860 - Mathematics for Elementary Teaching (2.0 cr)
• ED 2877 - Social Studies in Elementary Education (2.0 cr)
• ED 2878 - Science in Elementary Education (2.0 cr)
• ED 3201 - Reading and Language Arts (4.0 cr)
• ED 3202 - Writing and Language Arts (2.0 cr)
• ED 3301 - Creating Meaning Through Literature and Arts (4.0 cr)
• ED 3870 - Methods of Teaching Mathematics in Elementary Education (3.0 cr)
• ED 3902 - The Professional Teacher II (1.0 cr)

Student Teaching
Take 3 or more course(s) totaling 16 or more credit(s) from the following:

  Preschool
  Take at least 5 credits from the following:
  • ECE 4811 - Preschool Student Teaching (5.0 - 8.0 cr)
  • Kindergarten
    • ECE 4812 - Kindergarten Student Teaching (4.0 cr)
  • Elementary
    • ED 4827 - Elementary Student Teaching (7.0 cr)

Classroom Experience
Take 1 or more credit(s) from the following:
• ED 3800 - Elementary Education Classroom Experiences (0.5 cr)

Program Management
The program management emphasis is for students who wish to increase their academic preparation for supervisory, management, and/or leadership roles in child care and education programs.

Program outcomes:
- promote child development/learning
- encourage infant/toddler development/learning
- facilitate preprimary-aged children's development/learning
- assist in building family relationships
- document and assess to support young children
- become a reflective professional
- demonstrate ability to perform tasks associated with planning, organizing, staffing, leading, monitoring, and controlling for quality in childcare programs

The Early Childhood Education BS with an emphasis in Program Management requires a minimum of 77 credits within the major. Graduates with primary education emphasis demonstrate competencies as described by the Professional Educator Licensing Board (PELSB), Rules 8710.3000, Standards for Teachers of Early Childhood Education (ECE), and in PELSB Rules 8710.2000, Standards for Effective Practice for all Teachers.

Program Management Core
Take 6 courses totaling 18.5 credits from the following:
• ACCT 2101 - Principles of Accounting I (3.0 cr)
• ECE 3420 - Nurturing and Collaborative Relationships for Infants and Toddlers (3.0 cr)
• ECE 4883 - Student Experiences in Program Management (3.5 cr)
• MGMT 3200 - Principles of Management (3.0 cr)
• MGMT 3210 - Supervision and Leadership (3.0 cr)
• MGMT 3220 - Human Resource Management (3.0 cr)

Program Management Electives
Take 3 or more course(s) totaling 10 or more credit(s) from the following:
• CA 1040 - Web Site Development (3.0 cr)
• COMM 3008 - Business Writing (3.0 cr)
• COMM 4900 - Public Relations (3.0 cr)
• CRJS 2560 - Emergency Medical Responder (3.0 cr)
• ENTR 2200 - Introduction to Entrepreneurship and Small Business (3.0 cr)
• GBUS 1007 - Enactus (1.0 cr)
• HILTH 1062 - First Aid and CPR (2.0 cr)
• MGMT 3600 - Change, Creativity, and Innovation Management (3.0 cr)
• ED Electives
  Only non-required ED courses will satisfy this elective requirement.
  Take no more than 1 course(s) from the following:
  • ED 2xxx
• ED 3xx
• ED 4xx
Crookston Campus

Elementary Education B.S.

Humanities, Social Sciences, and Education

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 66
- Degree: Bachelor of Science

The BS degree in elementary education is a career-oriented program that prepares students to be effective teachers of young children from kindergarten through grade six.

Graduates of this teacher education program design, implement, and evaluate developmentally appropriate learning experiences for young children in elementary education classrooms. They are prepared to work collaboratively with families and in the community. Combined with a dual major in early childhood education, significant opportunities for professional positions exist in these programs: kindergarten through 6th grade, infant and toddler care and education, preschool programs, Head Start, and early childhood family education.

Graduates with the elementary education emphasis will demonstrate competencies as described in the MN Board of Teaching, Rules 8710.3200, Standard for Teachers of Elementary Education and in MN Rules 8710.2000, Standards for Effective Practice for all Teachers.

Program Outcomes for Elementary Education

Graduates will:
1. understand and apply educational principles relevant to the development of young children;
2. understand and apply the process of collaboration with families and other adults in support of the learning of young children;
3. understand how to integrate curriculum across subject areas in developmentally appropriate ways;
4. demonstrate knowledge of fundamental concepts of language arts, reading, and literature, mathematics, social studies, science, physical education and health, and visual and performing arts;
5. demonstrate ability in teaching approaches and instructional strategies to become effective teachers in the elementary level curriculum areas;
6. have knowledge of and ability to use a variety of assessment tools and practices to plan and evaluate effective teaching;
7. be able to create a motivating classroom learning environment; and
8. demonstrate a view of professional development as a career-long effort and responsibility.

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

1. Register and complete the MTLE Basic Skills Exams - Subtest 1: Reading (test Code 001); Subtest 2: Writing (Test Code 002); Subtest 3: Math (Test Code 003).
2. Submit Teacher Education Application to Department Head, Liberal Arts and Education; deadline is the last day of instruction per semester.
3. Purchase at UMC Bookstore the Teacher Education Program Portfolio packet and Insert BOT Standards Reflections completed for work completed in Ed 2200.
4. Submit writing sample - "Self-Reflection as a Prospective Professional Educator".

For information about University of Minnesota admission requirements, visit the Office of Admissions website.
General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
The overall major length in credits is 65.5.

Students must complete 40 upper-division credits.

Students must maintain a minimum GPA of 2.50 throughout their enrollment in the program and must earn a C- or better in all program required courses plus ART 1xxx and ED 2100.

Elementary Education Core
Take exactly 65.5 credit(s) from the following:
- ECE 4700 - Creative Arts and Language Arts: Preprimary (4.0 cr)
- ECE 4702 - Mathematics, Social Studies, and Sciences: Preprimary (4.0 cr)
- ECE 4730 - Understanding and Supporting Parenting (3.0 cr)
- ECE 4812 - Kindergarten Student Teaching (4.0 cr)
- ED 2200 - Foundations of Education (3.0 cr)
- ED 2300 - Introduction to Early Childhood and Elementary Education (3.0 cr)
- ED 2860 - Mathematics for Elementary Teaching (2.0 cr)
- ED 2877 - Social Studies in Elementary Education (2.0 cr)
- ED 2878 - Science in Elementary Education (2.0 cr)
- ED 3000 - Cultural Immersion (1.0 cr)
- ED 3001 - Perspectives of Substance Use for Educators (1.0 cr)
- ED 3009 - Human Relations in Diversity (1.0 cr)
- ED 3010 - Child Guidance and Classroom Management (3.0 cr)
- ED 3110 - Educational Psychology (3.0 cr)
- ED 3201 - Reading and Language Arts (4.0 cr)
- ED 3202 - Writing and Language Arts (2.0 cr)
- ED 3301 - Creating Meaning Through Literature and Arts (4.0 cr)
- ED 3500 - Introduction to Children with Special Needs (2.0 cr)
- ED 3870 - Methods of Teaching Mathematics in Elementary Education (3.0 cr)
- ED 3901 - The Professional Teacher I (0.5 cr)
- ED 3902 - The Professional Teacher II (1.0 cr)
- ED 4500 - Teaching in Inclusive Learning Environments (2.0 cr)
- ED 4750 - Family, School, and Community Relations (3.0 cr)
- ED 4827 - Elementary Student Teaching (7.0 cr)

ED 3800 is a limited lab-like experience course that is repeatable.

Take 1 or more credit(s) from the following:
- ED 3800 - Elementary Education Classroom Experiences (0.5 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take exactly 6 course(s) totaling exactly 19 credit(s) from the following:
- BIOL 1000 - Biology and Society [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ED 2100 - Child and Adolescent Development and Learning [HI/BEH/SSC] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

• Art Elective
  - ART 1152 - Drawing and Design [HUMANITIES] (3.0 cr)
  or ART 1252 - Painting and Design [HUMANITIES] (3.0 cr)
  or ART 1352 - Pottery Design and Techniques [HUMANITIES] (3.0 cr)

Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- ED 2000 - Educational Technology for P-12th Settings (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Approximately 11.5 credits will be needed. Exact number will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.
Crookston Campus

English B.S.
Humanities, Social Sciences, and Education

Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 40 to 41
• This program requires summer terms.
• Degree: Bachelor of Science

The BS in English prepares students to succeed in professional organizations in myriad fields. Concepts learned and skills developed through the English major will be advantageous in a wide range of employment situations, such as education, media, business, and in technical writing, proofreading, editing, publishing, freelance work, and any career requiring skills in analysis, problem-solving, research, or written and verbal communication, such as paralegals, newsletter editors, critics, marketing coordinators, proofreaders, researchers, librarians, managers, sales associates, and media analysts. Substantial numbers of English graduates find work in business, law, ministry, libraries, and other applied fields. A degree in English can also prepare students for graduate study in English, humanities, law, and medicine.

English graduates will gain an understanding and appreciation of the English language, develop critical thinking and theoretical application skills through the study and critique of literature, and gain insight into the importance of diversity.

The required minor or double major in another field allows students to further focus their professional career preparation.

Program outcomes for graduates:
Demonstrate proficiencies in the intensive writing processes through invention, organization, drafting, revision, and editing for professional presentation
Use authority, point-of-view, and individual voice and style in personal and professional writing
Demonstrate multicultural awareness of the scope and variety of literary works from around the world, literary movements, and literary theories
Locate, evaluate, and synthesize in a responsible manner material from diverse sources and points of view, and understand those works as expressions of individual and human values within global contexts
Think critically, analyze, interpret, and articulate an informed personal reaction to world literature through writing, discussion, and presentation
Participate effectively in groups with emphasis on listening, critical and reflective thinking, and responding

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
A minimum of 40 upper-division credits are required to graduate.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Minor or Second Major Requirement
Students majoring in English must also complete a minor or a second major in another field.
English Core
Take exactly 9 course(s) totaling exactly 25 credit(s) from the following:

- ENGL 1005 - Introduction to World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 2001 - Introduction to the Field of English (1.0 cr)
- ENGL 3001 - World Culture and Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 2223 - English Grammar and Usage (3.0 cr)
- ENGL 3002 - Applied Literary Theory and Criticism (3.0 cr)
- ENGL 3303 - Writing in Your Profession (3.0 cr)
- Choose one of the following:
  - WRIT 3900 - Seminar Experience in English (3.0 cr)
  or Take 3 or more credit(s) from the following:
  - WRIT 3994 - Undergraduate Research in English (1.0 - 3.0 cr)

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

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

- COMM 3008 - Business Writing (3.0 cr)
- COMM 3537 - Visual Communication (3.0 cr)
- COMM 3857 - Technical Communication (3.0 cr)
- COMM 4000 - News and Social Media Communication (3.0 cr)
- COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
- COMM 4802 - Publication Design and Management (3.0 cr)
- ED 3301 - Creating Meaning Through Literature and Arts (4.0 cr)
- ENGL 4000 - Intercultural Literature: Conversations between Cultures [HUMANITIES, HUMAN DIV] (3.0 cr)
- ENGL 4007 - Advanced Topics in Literature (3.0 cr)
- GNED 3000 - Global Seminar [GLOB PERSP] (1.0 - 3.0 cr)
- GNED 3804 - Individual Studies (1.0 - 3.0 cr)
- HUM 3000 - Global Seminar in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- WRIT 3856 - Editing (3.0 cr)
- WRIT 3860 - Topics in Writing (3.0 cr)
- WRIT 3900 - Seminar Experience in English (3.0 cr)
- WRIT 3994 - Undergraduate Research in English (1.0 - 3.0 cr)

Lower Division
Take at most 6 credit(s) from the following:

- ENGL 1016 - American Literature: Race, Gender, Class, and the American Dream [HUMANITIES, HUMAN DIV] (3.0 cr)
- ENGL 1017 - British Literature [HUMANITIES] (3.0 cr)
- ENGL 2000 - Topics in Literature (3.0 cr)
- HUM 2000 - Global Studies in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- WRIT 2335 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)
- WRIT 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

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

- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- Choose one of the following:
  - COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
  or COMP 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology Requirements
If applicable, the course taken from below may be used to satisfy both the program and technology requirements.

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

- WRIT 2110 - Digital Writing (3.0 cr)

Open Electives
Students must take enough open electives credits to satisfy the 120 credit graduation requirement.
Program Sub-plans
A sub-plan is not required for this program.

Online
The curriculum requirements for the online English BS program are the same as the on-campus English BS program requirements with the addition of GBUS 1005 - Orientation to Online Learning.

The English BS online track requires a minimum of 41 credits within the major.

Orientation to Online Learning
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
• GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus

English Education B.S.
Humanities, Social Sciences, and Education
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 69
- Required credits within the major: 120
- Degree: Bachelor of Science

A bachelor of science degree in English Education at UMC is a career-oriented degree that allows students to work within the field of English Education in public schools at the 5-12 grade levels. Graduates with an English Education degree will gain an understanding and appreciation of the English language, education practices, develop critical thinking, communication, and theoretical application skills, and gain insight into the importance of diversity.

Program outcomes
Graduates will:

1. Apply learners growth and development principles across all domains to design and implement developmentally appropriate learning experiences.
2. Insure inclusive learning through understanding of individual differences and diverse cultures.
3. Work with others to create environments that support collaborative and engaged learning including self-motivation.
4. Demonstrate content knowledge, concepts, and tools of inquiry in the disciplines/career clusters associated with writing, literature, and communication.
5. Connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and problem solving in authentic contexts.
6. Use a variety of assessment tools and practices to monitor learner progress and to plan and evaluate effective instruction.
7. Plan instruction that supports all learners in meeting rigorous learning goals within integrated curriculum.
8. Use a variety of instructional strategies that encourage learners to develop deep understanding of content and make relevant connections.
9. Engage in ethical practices and professional development as a career-long effort and responsibility.
10. Provide leadership and collaborate with families, school professionals, and community members in support of student learning.

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

Admission Requirements
Admission to UMC degree programs is based on our institutional admission criteria. When current undergraduate students and transfer students desire admission into MN State Approved Teacher Preparation Programs, a series of additional required assessment activities begin.

Students submit the Teacher Education (TE) Application AFTER successful completion of 45 credits and BEFORE the completion of 60 credits. Students transferring from other institutions may exceed 60 credits (non-UMC) and must consult with academic advisor regarding timing of submission of TE Application.

Students are required to have and maintain a minimum of 2.50 cumulative GPA to be admitted to Teacher Education programs.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
1. Achieve and maintain a minimum cumulative 2.5 GPA.
2. Register and complete NES Basic Skills tests prior to admission to this Teacher Education program. Must achieve state-mandated
cut scores on two of the three tests prior to student teaching.
3. Complete Teacher Education application materials.
4. Recognize that a minimum grade of C- is required in all program required courses
5. Complete and achieve passing scores on state-mandated edTPA (Teacher Performance Assessment)

**Education Core**
Take exactly 13 course(s) totaling exactly 25.5 credit(s)
- ED 2200 - Foundations of Education (3.0 cr)
- ED 2400 - Introduction to Middle and High School Education and Experiential Learning (3.0 cr)
- ED 3000 - Cultural Immersion (1.0 cr)
- ED 3001 - Perspectives of Substance Use for Educators (1.0 cr)
- ED 3009 - Human Relations in Diversity (1.0 cr)
- ED 3110 - Educational Psychology (3.0 cr)
- ED 3210 - Reading in the Content Area (2.0 cr)
- ED 3500 - Introduction to Children with Special Needs (2.0 cr)
- ED 3600 - Classroom Management in Middle School and High School Settings (3.0 cr)
- ED 3901 - The Professional Teacher I (0.5 cr)
- ED 3902 - The Professional Teacher II (1.0 cr)
- ED 4400 - Teaching Grades 5-12 Students in Inclusive Environments (2.0 cr)
- ED 4750 - Family, School, and Community Relations (3.0 cr)

**Communication Arts and Literature Curriculum**
Take exactly 10 course(s) totaling exactly 30 credit(s) from the following:
- COMM 3000 - Communication Theory (3.0 cr)
- COMM 3431 - Persuasion (3.0 cr)
- COMM 3704 - Business and Professional Speaking (3.0 cr)
- ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- WRIT 2223 - English Grammar and Usage (3.0 cr)
- WRIT 3002 - Applied Literary Theory and Criticism (3.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)
- Choose one of the following:
  - WRIT 2335 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)
  - or TH 2434 - Oral Interpretation and Performance Techniques [HUMANITIES] (3.0 cr)

**Communication Arts and Literature Education Core**
Take exactly 3 course(s) totaling exactly 13 credit(s) from the following:
- ENED 2001 - Early Experience in Communication Arts and Literature (1.0 cr)
- ENED 3004 - Methods of Teaching Communication Arts and Literature (4.0 cr)
- ENED 4900 - Student Teaching: High School (8.0 cr)

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ED 2100 - Child and Adolescent Development and Learning [HI/BEH/SSC] (3.0 cr)
- ENGL 1005 - Introduction to World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

**Technology**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- COMM 2110 - Communication Technology Trends (3.0 cr)

Open Electives - 8.5 credits required
**Crookston Campus**

**English Education Minor**
*Humanities, Social Sciences, and Education*

**Academic Affairs**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 29

The English minor, which is the middle school Communication Arts and Literature (CA&L) Endorsement allows any teacher education candidate at UMC to have the option of earning a middle-level Communication Arts and Literature Endorsement in addition to their professional teaching license. Graduates with an English Education minor will gain an understanding and appreciation of the English language, education practices, develop critical thinking, communication, and theoretical application skills, and gain insight into the importance of diversity.

Program outcomes
Graduates will:

1. Apply learners growth and development principles across all domains to design and implement developmentally appropriate learning experiences.
2. Insure inclusive learning through understanding of individual differences and diverse cultures.
3. Work with others to create environments that support collaborative and engaged learning including self-motivation.
4. Demonstrate content knowledge, concepts, and tools of inquiry in the disciplines/career clusters associated with writing, literature, and communication.
5. Connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and problem solving in authentic contexts.
6. Use a variety of assessment tools and practices to monitor learner progress and to plan and evaluate effective instruction.
7. Plan instruction that supports all learners in meeting rigorous learning goals within integrated curriculum.
8. Use a variety of instructional strategies that encourage learners to develop deep understanding of content and make relevant connections.
9. Engage in ethical practices and professional development as a career long effort and responsibility.
10. Provide leadership and collaborate with families, school professionals, and community members in support of student learning.

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

**Minor Requirements**
1. Achieve and maintain a minimum cumulative 2.5 GPA.
2. Recognize that a minimum grade of C- is required in all program required courses.

**Communication Arts & Literature Middle Level Endorsements**
Take exactly 7 course(s) totaling exactly 21 credit(s) from the following:
- COMM 2110 - Communication Technology Trends (3.0 cr)
- COMM 3431 - Persuasion (3.0 cr)
- ENGL 1005 - Introduction to World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- WRIT 2223 - English Grammar and Usage (3.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)

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Information current as of August 09, 2021
Communication Arts and Literature Education Core: Middle Level
Take exactly 3 course(s) totaling exactly 8 credit(s) from the following:
• ENED 2001 - Early Experience in Communication Arts and Literature (1.0 cr)
• ENED 3004 - Methods of Teaching Communication Arts and Literature (4.0 cr)
• ENED 4800 - Student Teaching: Middle School (3.0 cr)
Crookston Campus

English Minor

Humanities, Social Sciences, and Education

Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 19
- This program requires summer terms.

The minor in English prepares students to succeed in professional organizations and myriad fields by offering students skills that will supplement their chosen majors. English minor graduates will gain an understanding and appreciation of the English language, develop critical thinking and theoretical application skills through the study and critique of literature, and gain insight into the importance of diversity.

Minor Outcomes

Graduates will:
- Demonstrate proficiencies in the intensive writing processes through invention, organization, drafting, revision, and editing for professional presentation
- Use authority, point-of-view, and individual voice and style in personal and professional writing
- Demonstrate multicultural awareness of the scope and variety of literary works from around the world, literary movements, and literary theories
- Locate, evaluate, and synthesize in a responsible manner material from diverse sources and points of view, and understand those works as expressions of individual and human values within global contexts
- Think critically, analyze, interpret, and articulate an informed personal reaction to world literature through writing, discussion, and presentation
- Participate effectively in groups with emphasis on listening, critical and reflective thinking, and responding

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)

Minor Requirements

English Core

Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
- WRIT 3303 - Writing in Your Profession (3.0 cr)
- ENGL 1005 - Introduction to World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)

English Electives

Take 6 or more credit(s) from the following:
- COMM 3008 - Business Writing (3.0 cr)
- COMM 3537 - Visual Communication (3.0 cr)
- COMM 3857 - Technical Communication (3.0 cr)
- COMM 4000 - News and Social Media Communication (3.0 cr)
- COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
- COMM 4802 - Publication Design and Management (3.0 cr)
- ED 3301 - Creating Meaning Through Literature and Arts (4.0 cr)
- ENGL 1016 - American Literature: Race, Gender, Class, and the American Dream [HUMANITIES, HUMAN DIV] (3.0 cr)
- ENGL 1017 - British Literature [HUMANITIES] (3.0 cr)
- ENGL 2000 - Topics in Literature (3.0 cr)
- ENGL 3001 - World Culture and Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 4000 - Intercultural Literature: Conversations between Cultures [HUMANITIES, HUMAN DIV] (3.0 cr)
- ENGL 4007 - Advanced Topics in Literature (3.0 cr)
- GNED 3000 - Global Seminar [GLOB PERSP] (1.0 - 3.0 cr)
- GNED 3804 - Individual Studies (1.0 - 3.0 cr)
- HUM 2000 - Global Studies in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- HUM 3000 - Global Seminar in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- WRIT 2235 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)
- WRIT 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)
- WRIT 3856 - Editing (3.0 cr)
- WRIT 3860 - Topics in Writing (3.0 cr)

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

Online
Required credits in this minor: 19

The curriculum requirements for the online English Minor Program is the same as the on-campus English Minor Program requirements with the addition of GBUS 1005 - Orientation to Online Learning.

Orientation to Online Learning
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
Environmental Sciences B.S.

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 55 to 59
- This program requires summer terms.
- Degree: Bachelor of Science

The BS in environmental sciences is designed to provide students with the scientific background and practical skills needed to successfully address environmental issues and the background required to be successful applicants to graduate programs. Students may choose from advanced courses designed to emphasize studies in biological remediation technologies, water quality, or agriculture while participating in a common core of courses which provide knowledge in the basic principles relevant to all areas.

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. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Environmental Sciences Core

Take exactly 12 course(s) totaling exactly 29 credit(s) from the following:
- BIOL 3420 - Ecotoxicology (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)
- ENSC 2055 - Hazardous Waste Worker Training (3.0 cr)
- ENSC 3124 - Environmental Science and Remediation Techniques (3.0 cr)
- ENSC 3132 - Environmental Factors and Human Health (3.0 cr)
- ENSC 4022 - Risk Assessment and Environmental Impact Statements (3.0 cr)
- ENSC 4100 - Capstone in Environmental Science (2.0 cr)
- NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)
- BIOL 3900 - Internship (1.0 - 2.0 cr)
- BIOL 3901 - Post-Internship Seminar (0.5 cr)

Take 2 or more credit(s) from the following:
- BIOL 3900 - Internship (1.0 - 2.0 cr)
- BIOL 3901 - Post-Internship Seminar (0.5 cr)

Liberal Education

This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take exactly 9 course(s) totaling exactly 29 credit(s) from the following:
- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ECON 1010 - Global Trade Economics [GLOB PERSP] (3.0 cr)
 Program Sub-plans

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

Science

The BS in environmental science with an emphasis in science trains students with the scientific background to understand the fate of chemicals in a variety of human and non-human environments. This will enable students to have a strong understanding of how chemicals move in the environment, and the impacts they have in the various parts of the environment. This science-based understanding of chemical fate and transport will allow students to inform policymakers as to the effectiveness of various decisions on the protection of the environment.

Science Core

Take exactly 7 course(s) totaling exactly 20 credit(s) from the following:

- AGRO 3030 - Research Techniques in Agriculture and Natural Resources (3.0 cr)
- CHEM 1062 - Chemical Principles II (3.0 cr)
- CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
- CHEM 2301 - Organic Chemistry I (3.0 cr)
- CHEM 2310 - Organic Chemistry Laboratory I (2.0 cr)
- CHEM 3022 - Chemical Analysis in the Biological and Environmental Sciences (4.0 cr)
- ENSC 3720 - Fate of Chemicals in the Environment (4.0 cr)

Science Electives

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

- AGEC 1005 - World Agricultural Food Systems (3.0 cr)
- AGEC 3430 - Food Marketing Systems (3.0 cr)
- ANSC 3004 - Livestock Facilities and Environmental Systems (3.0 cr)
- ASM 3005 - Surveying (4.0 cr)
- ASM 3360 - Applications in Precision Agriculture (3.0 cr)
- BIOI 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- BIOI 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- BIOI 2032 - General Microbiology (4.0 cr)
- BM 3008 - Sustainability and Compliance (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Chemistry Laboratory II (2.0 cr)
- CHEM 3021 - Biochemistry (3.0 cr)
- HORT 3090 - Advanced Landscape Design (3.0 cr)
- HUM 3310 - Culture and Technology [HUMANITIES, GLOB PERSP] (3.0 cr)
- MATH 1271 - Calculus I [MATH THINK] (4.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- NATR 3480 - Ecological Restoration (3.0 cr)
- NATR 3486 - Conservation Biology (3.0 cr)
- NATR 3488 - Invasive Species Ecology and Management (3.0 cr)
- NATR 3580 - Advanced Ecological Restoration (2.0 cr)
- NATR 3635 - Geographic Information Systems Applications (3.0 cr)
- NATR 4699 - Integrated Resource Management (3.0 cr)
- POL 1054 - Comparative Government (3.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)
- SWM 3009 - Hydrology and Water Quality (4.0 cr)
- SWM 3224 - Soil and Water Conservation (4.0 cr)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SWM 3225</td>
<td>Watershed Management</td>
<td>3.0</td>
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**Liberal Education**

Take 3 or more course(s) totaling 8 or more credit(s) from the following:

- CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
- GEOL 1001 - Introductory Geology [PHYS SCI, PEOPLE/ENV] (4.0 cr)

**Open Electives**

Take enough open electives to fulfill the program requirement of 120 credits.

**Studies**

The BS in environmental science with an emphasis in studies trains students with the general understanding of environmental science with specific applications focusing on how it manifests in our society. These students will be at the core of making environmental policies, city planning, and sustainable development.

**Studies Core**

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

- COMM 4007 - Political Communication (3.0 cr)
- NATR 3344 - Land Use Planning (3.0 cr)

**Studies Electives**

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

- AGEC 1005 - World Agricultural Food Systems (3.0 cr)
- AGEC 3430 - Food Marketing Systems (3.0 cr)
- ANSC 3004 - Livestock Facilities and Environmental Systems (3.0 cr)
- ASM 3009 - Surveying (4.0 cr)
- ASM 3360 - Applications in Precision Agriculture (3.0 cr)
- BIOL 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- BIOL 2032 - General Microbiology (4.0 cr)
- BM 3008 - Sustainability and Compliance (3.0 cr)
- CHEM 2302 - Organic Chemistry II (3.0 cr)
- CHEM 2311 - Organic Chemistry Laboratory II (2.0 cr)
- CHEM 3021 - Biochemistry (3.0 cr)
- HORT 3030 - Landscape Design (4.0 cr)
- HORT 3040 - Landscape Installation and Maintenance (3.0 cr)
- HORT 3090 - Advanced Landscape Design (3.0 cr)
- HUM 3310 - Culture and Technology [HUMANITIES, GLOB PERSP] (3.0 cr)
- MATH 1271 - Calculus I [MATH THINK] (4.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- NATR 3489 - Ecological Restoration (3.0 cr)
- NATR 3486 - Conservation Biology (3.0 cr)
- NATR 3488 - Invasive Species Ecology and Management (3.0 cr)
- NATR 3580 - Advanced Ecological Restoration (2.0 cr)
- NATR 3635 - Geographic Information Systems Applications (3.0 cr)
- NATR 4699 - Integrated Resource Management (3.0 cr)
- POL 1054 - Comparative Government (3.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)
- SWM 3009 - Hydrology and Water Quality (4.0 cr)
- SWM 3224 - Soil and Water Conservation (4.0 cr)
- SWM 3225 - Watershed Management (3.0 cr)

**Liberal Education**

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

- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
- POL 1001 - American Government [ETH/CIV RE] (4.0 cr)

**Open Electives**

Take enough open electives to fulfill the program requirement of 120 credits.
**Crookston Campus**

**Environmental Sciences Minor**  
*Math, Science and Technology*

**Academic Affairs**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 20
- This program requires summer terms.

The environmental sciences minor introduces students to the core concepts of environmental sciences. Students will gain an overall understanding of environmental sciences and its importance in today's society. This minor meshes well with major courses of study in biology, agronomy, horticulture, animal science, and natural resources giving these students a feel for how their disciplines interact with environmental sciences. It also helps develop critical thinking skills in applying science-based decision making as it pertains to the environment.

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

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**Minor Requirements**

**Environmental Sciences Core**  
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
- BIOL 3420 - Ecotoxicology (3.0 cr)
- ENSC 3124 - Environmental Science and Remediation Techniques (3.0 cr)
- SUST 4100 - Sustainability Capstone (2.0 cr)
- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)  
  or BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)

**Environmental Sciences Electives**  
Take 2 - 3 course(s) totaling 6 - 8 credit(s) from the following:
- ANSC 3004 - Livestock Facilities and Environmental Systems (3.0 cr)
- ENSC 3132 - Environmental Factors and Human Health (3.0 cr)
- ENSC 3496 - Special Topics in Environmental Sciences (1.0 - 12.0 cr)
- ENSC 3720 - Fate of Chemicals in the Environment (4.0 cr)
- ENSC 4022 - Risk Assessment and Environmental Impact Statements (3.0 cr)
- NATR 3480 - Ecological Restoration (3.0 cr)
- NATR 3486 - Conservation Biology (3.0 cr)
- NATR 3580 - Advanced Ecological Restoration (2.0 cr)
- SOIL 3414 - Soil Fertility and Plant Nutrition (4.0 cr)
- SWM 3009 - Hydrology and Water Quality (4.0 cr)
- SWM 3224 - Soil and Water Conservation (4.0 cr)
Crookston Campus
Equine Business Management B.S.
Agriculture and Natural Resources

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 74
- Degree: Bachelor of Science

Graduates of the University of Minnesota Crookston's equine management program understand and are able to manage the daily nutrition, health, and exercise/training needs of horses in their care. They have the knowledge and skills necessary to succeed in equine or equine-related employment and have the business and management experience necessary to operate an equine or related business. The program focus is on the business and management aspects of the horse industry and affiliated agriculture industries, thus providing a broad-based management education which appeals to employers.

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. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Business Management Core

Take 8 or more course(s) totaling 24 or more credit(s) from the following:
- AGEC 2310 - Agribusiness Financial Records (3.0 cr)
- AGEC 2530 - Professional Agriselling (3.0 cr)
- AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)
- AGEC 3540 - Farm Business Management (3.0 cr)
- AGEC 4760 - Business Plan Development for Agribusiness (3.0 cr)
- GBUS 3107 - Legal Environment in Business (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)

Animal Science and Equine Core

Take 11 or more course(s) totaling 32 or more credit(s) from the following:
- ANSC 1004 - Introduction to Animal Science (4.0 cr)
- ANSC 2104 - Feeds and Feeding (4.0 cr)
- ANSC 3104 - Applied Animal Nutrition (4.0 cr)
- EQSC 1002 - Equine Careers and Husbandry Practices (1.0 cr)
- EQSC 1202 - Equine Evaluation (2.0 cr)
- EQSC 2102 - Horse Production (4.0 cr)
- EQSC 2110 - Topics in Farrier Science (1.0 cr)
- EQSC 2112 - Riding Instructor Training (3.0 cr)
- EQSC 3305 - Equine Reproductive Techniques (3.0 cr)
- EQSC 3413 - Horse Training and Showing (3.0 cr)
- EQSC 4102 - Equine Management (3.0 cr)
Internship
Take 3 or more course(s) totaling 3 or more credit(s) from the following:

Pre-Internship Seminar
• GNAG 2899 - Pre-Internship Seminar (0.5 cr)
   or GNAG 3899 - Pre-Internship Seminar (0.5 cr)

• Internship
Take 2 or more credit(s) from the following:
• GNAG 3900 - Internship (0.5 - 3.0 cr)

• Post-Internship Seminar
• GNAG 3901 - Post Internship Seminar (0.5 cr)

Business Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
• MKTG 3230 - Digital Marketing (3.0 cr)
• MKTG 3250 - Integrated Marketing Communication (3.0 cr)
• MGMT 3210 - Supervision and Leadership (3.0 cr)
• MGMT 3220 - Human Resource Management (3.0 cr)
• MGMT 3250 - Operations Management (3.0 cr)
• MGMT 4200 - Project Management (3.0 cr)

Equine Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
• EQSC 1000 - Light Horse Driving (2.0 cr)
   or EQSC 1100 - Western Equitation (3.0 cr)
   or EQSC 1200 - Hunt Seat & Dressage Equitation (3.0 cr)
   or EQSC 1300 - Saddle Seat Equitation (2.0 cr)
   or EQSC 2001 - Concepts in Dressage Equitation (3.0 cr)
   or EQSC 2202 - Advanced Equine Evaluation (2.0 cr)
   or EQSC 3441 - Topics in Advanced Western Equitation (3.0 cr)
   or EQSC 3443 - Topics in Advanced Equitation Over Fences (3.0 cr)
   or GNAG 2000 - Global Studies in Agriculture and/or Natural Resources [GLOB PERSP] (1.0 - 3.0 cr)
   or GNAG 3000 - Global Seminar in Agriculture and/or Natural Resources [GLOB PERSP] (1.0 - 3.0 cr)
   or PER 1761 - Varsity Sports: Equestrian (1.0 cr)

Animal Science Electives
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ANSC 3023 - Animal Breeding (3.0 cr)
   or ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
   or ANSC 3503 - Animal Health and Disease (3.0 cr)
   or EQSC 3403 - Equine Exercise Physiology (3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 6 or more course(s) from the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)

Technology
AGEC 2310 Agribusiness Financial Records is required.
AGEC 2310 can be used to satisfy both the program and technology requirement.

Open Electives
Students must take enough open elective credits to meet the 120 credit requirement for graduation.
Crookston Campus
Equine Science B.S.
Agriculture and Natural Resources
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120 to 124
- Required credits within the major: 77 to 92
- This program requires summer terms.
- Degree: Bachelor of Science

Graduates of UMC’s equine science program understand and are able to meet the daily care, nutrition, health care, and exercise/training needs of horses in their care. They have the knowledge and skills necessary to succeed in equine or equine-related employment and have the business and management experience necessary to operate an equine or related business. The program balances the practical skills students need to work with and care for horses and the theory required to build a successful career. The focus is on the business and management aspects of the horse industry, thus providing a broad-based education which appeals to employers. Options also exist for students who wish to pursue graduate school or pre-veterinary studies.

Program outcomes for graduates:
- demonstrate knowledge of theory and practical experience in physiology, nutrition, health, and reproduction of the horse;
- demonstrate a working knowledge of equine ownership responsibility and husbandry;
- be able to apply management theories and software and marketing strategies to equine and related enterprises;
- demonstrate horsemanship and training skills in a variety of disciplines and discern what methods work most effectively with horses of different temperaments and breeding/conformation;
- have practical skills and knowledge that will lead to a variety of employment opportunities in the equine industry.

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. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Equine Science Core
Take exactly 39 credit(s) from the following:
- ANSC 1004 - Introduction to Animal Science (4.0 cr)
- ANSC 2104 - Feeds and Feeding (4.0 cr)
- ANSC 3104 - Applied Animal Nutrition (4.0 cr)
- ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
- ANSC 3503 - Animal Health and Disease (3.0 cr)
- EQSC 1002 - Equine Careers and Husbandry Practices (1.0 cr)
- EQSC 1202 - Equine Evaluation (2.0 cr)
- EQSC 2102 - Horse Production (4.0 cr)
- EQSC 2110 - Topics in Farrier Science (1.0 cr)
- EQSC 3305 - Equine Reproductive Techniques (3.0 cr)
- EQSC 4102 - Equine Management (3.0 cr)
- GBUS 3107 - Legal Environment in Business (3.0 cr)
Pre-Internship Seminar
GNAG 2899 - Pre-Internship Seminar (0.5 cr)
GNAG 3899 - Pre-Internship Seminar (0.5 cr)

Internship
Take 2 or more credit(s) from the following:
• GNAG 3900 - Internship (0.5 - 3.0 cr)

Post Internship Seminar
GNAG 3901 - Post Internship Seminar (0.5 cr)

Agriculture Electives
Students select electives in consultation with their advisor.
Take exactly 2 credit(s) from the following:
• AGEC
• AGRO
• ANSC
• ASM
• EQSC
• GNAG
• PUBH
• SOIL

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 5 course(s) totaling exactly 16 credit(s) from the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
If applicable, the course taken from below may be used to satisfy both the program and technology requirements.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• AGEC 2310 - Agribusiness Financial Records (3.0 cr)
• CA 1xxx
• CA 2xxx

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

Equine Science
This emphasis leads graduates to equine careers, including management, training/showing, riding instruction, breeding/reproduction, feed production/sales, sales of equestrian equipment or pharmaceutical/health care products, and veterinary technician. Students receive classroom instruction and hands-on experiential learning. Focus is on the business/management aspect of the horse industry. Curriculum includes computer, communications, and sales training. Coursework includes riding instruction, nutrition, breeding, reproduction, horse production, evaluation, feeds, health/disease, management, training/showing, and facilities. Students can take courses specific to their interest.

Equine Science Emphasis Core
Take 9 - 10 course(s) totaling exactly 29 credit(s) from the following:
• AGEC 2310 - Agribusiness Financial Records (3.0 cr)
• AGEC 3540 - Farm Business Management (3.0 cr)
• AGEC 3310 - Advanced Agribusiness Financial Records (3.0 cr)
• CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
• EQSC 2112 - Riding Instructor Training (3.0 cr)
• EQSC 3413 - Horse Training and Showing (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
Choose one of the following:
• ANSC 3023 - Animal Breeding (3.0 cr)
or BIL 3022 - Principles of Genetics (3.0 cr)
Choose one of the following:
• CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)

Equine Science Electives
Take 7 or more credit(s) from the following:
• EQSC 1000 - Light Horse Driving (2.0 cr)
• EQSC 1100 - Western Equitation (3.0 cr)
• EQSC 1200 - Hunt Seat & Dressage Equitation (3.0 cr)
• EQSC 1300 - Saddle Seat Equitation (2.0 cr)
• EQSC 2001 - Concepts in Dressage Equitation (3.0 cr)
• EQSC 3441 - Topics in Advanced Western Equitation (3.0 cr)
• EQSC 3443 - Topics in Advanced Equitation Over Fences (3.0 cr)

Agricultural Electives
Students must complete enough agriculture electives (selected in consultation with their advisor) to meet the 120 credit graduation requirement. The number of credits needed will depend on the LE course selections.

Pre-Veterinary Medicine
The pre-veterinary medicine emphasis meets the course entry requirements for admission to the University of Minnesota College of Veterinary Medicine; however, similar entry requirements among colleges of veterinary medicine, coupled with sufficient flexibility within the curriculum, allow graduates to meet the admission requirements for many other institutions. Students who graduate are well prepared to pursue their career goal of becoming a veterinarian. Students are exposed to traditional classroom instruction, as well as hands-on/experiential learning in the laboratory.

Pre-Veterinary Medicine Core
Take exactly 16 course(s) totaling exactly 48 credit(s) from the following:
• ANSC 3023 - Animal Breeding (3.0 cr)
• ANSC 3304 - Reproduction, AI, and Lactation (4.0 cr)
• BIOL 2012 - General Zoology (4.0 cr)
• BIOL 2032 - General Microbiology (4.0 cr)
• BIOL 3022 - Principles of Genetics (3.0 cr)
• CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
• CHEM 1062 - Chemical Principles II (3.0 cr)
• CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 2310 - Organic Chemistry Laboratory I (2.0 cr)
• CHEM 3021 - Biochemistry (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• PHYS 1101 - Introductory College Physics I [PHYS SCI] (4.0 cr)
• PHYS 1102 - Introductory College Physics II [PHYS SCI] (4.0 cr)
• Choose one of the following:
  • MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  or MATH 1142 - Survey of Calculus [MATH THINK] (3.0 cr)

Pre-Veterinary Medicine Electives
Take 3 or more credit(s) from the following:
• EQSC 1000 - Light Horse Driving (2.0 cr)
• EQSC 1100 - Western Equitation (3.0 cr)
• EQSC 1200 - Hunt Seat & Dressage Equitation (3.0 cr)
• EQSC 1300 - Saddle Seat Equitation (2.0 cr)
• EQSC 2001 - Concepts in Dressage Equitation (3.0 cr)
• EQSC 3441 - Topics in Advanced Western Equitation (3.0 cr)
• EQSC 3443 - Topics in Advanced Equitation Over Fences (3.0 cr)

Agricultural Electives
Students must complete enough agriculture electives (selected in consultation with their advisor) to meet the 124 credit graduation requirement. The number of credits needed will depend on the LE course selections.
Crookston Campus
Equine Science Minor
Agriculture and Natural Resources
Academic Affairs

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 25 to 27

The minor in equine science introduces students to the pertinent areas of management and production of the equine industry. Students learn core concepts of the equine industry, including training in reproduction, exercise physiology, nutrition, management of equine facilities, and rider instructor training.

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

Minor Requirements
Equine Science Minor Requirements
Take exactly 8 course(s) totaling 25 - 27 credit(s) from the following:

• ANSC 2104 - Feeds and Feeding (4.0 cr)
• ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
• ANSC 3503 - Animal Health and Disease (3.0 cr)
• EQSC 1202 - Equine Evaluation (2.0 cr)
• EQSC 2102 - Horse Production (4.0 cr)
• EQSC 4102 - Equine Management (3.0 cr)

• Choose one of the following:
  • EQSC 1000 - Light Horse Driving (2.0 cr)
  or EQSC 1100 - Western Equitation (3.0 cr)
  or EQSC 1200 - Hunt Seat & Dressage Equitation (3.0 cr)
  or EQSC 1300 - Saddle Seat Equitation (2.0 cr)
• Choose one of the following:
  • ANSC 3304 - Reproduction, AI, and Lactation (4.0 cr)
  or EQSC 3305 - Equine Reproductive Techniques (3.0 cr)
  or EQSC 3403 - Equine Exercise Physiology (3.0 cr)
Crookston Campus
Exercise Science and Wellness B.S.
Math, Science and Technology
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 50
- This program requires summer terms.
- Degree: Bachelor of Science

The BS in exercise science and wellness combines the study of exercise physiology within the holistic context of health and wellness. The program integrates a hands-on, experiential learning laboratory working with various demographic populations (e.g., athletes, new moms, senior citizens). Through a dynamic collaboration between the University and the local hospital rehabilitation services, students are exposed to scenarios to apply theory to patient rehabilitation. Students learn techniques in coaching, counseling and effective motivational techniques during both internal and external internship experiences. The curriculum provides the knowledge to develop tailored exercise prescriptions to patients after an illness or injury that will promote improved health and wellness for the future. After completion of the program, the graduate will be well-positioned for a career in the physical fitness industry, hospitals, or schools.

As the United States population ages, the need for healthy living and better fitness will demand more individuals to facilitate quality of life decisions and overall wellness. The exercise science and wellness major uniquely positions graduates to enter this new reality with the knowledge and experience to merge exercise with health and wellness.

This major also aligns with the University's mission to internationalize the curriculum by being one of the first majors at the University of Minnesota, Crookston to internationalize the program by integrating learner outcomes that challenge the students to reflect on their own learning and become global competent graduates.

Program outcomes:

- Apply exercise related principles to apparently healthy populations as well as those with cardiovascular, pulmonary and/or metabolic disease.
- Administer health appraisals, assess client needs, design and administer appropriate programs such as smoking cessation, blood pressure, weight control, and nutrition counseling.
- Design and administer appropriate strength, power, flexibility, agility, and cardio-respiratory programs based on clients goals, needs and abilities.
- Integrate core and body mechanics into the exercise prescription for both consultative and on-site Occupational Therapists and Physical Therapists.
- Describe the implications of positive and negative health practices impacting physical, social, occupational, emotional, intellectual, spiritual, and environmental health within a cultural context.
- Discuss major health risks and diseases affecting contemporary society, and explore the principal ways to promote health and wellness through lifestyle and behavioral change throughout the lifespan and within a cultural context.

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. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades
earned at UMC or transferred in from another institution.

**Exercise Science and Wellness Core**
Take exactly 18 course(s) totaling exactly 50 credit(s) from the following:
- BIOL 2103 - Human Anatomy and Physiology I (4.0 cr)
- BIOL 2104 - Human Anatomy and Physiology II (4.0 cr)
- BIOL 3520 - Exercise Physiology (4.0 cr)
- HLTH 1062 - First Aid and CPR (2.0 cr)
- HSCI 1072 - Wellness (3.0 cr)
- HSCI 1201 - Introduction to Exercise Science (2.0 cr)
- HSCI 2650 - Stress Management (3.0 cr)
- HSCI 3001 - Community Health and Wellness (3.0 cr)
- HSCI 3112 - Kinesiology (4.0 cr)
- HSCI 4520 - Exercise Testing and Prescription (3.0 cr)
- HSCI 4650 - Advanced Concepts of Strength and Conditioning (3.0 cr)
- HSCI 4720 - Exercise and Wellness for Special Populations (3.0 cr)
- SRM 2000 - Prevention and Care of Athletic Injuries (3.0 cr)
- HSCI 3050 - Sport Nutrition (3.0 cr)
- WRIT 3303 - Writing in Your Profession (3.0 cr)

**Pre-Internship Seminar**
HSCI 3899 - Pre-Internship Seminar (0.5 cr)

**Internship**
Take 2 or more credit(s) from the following:
- HSCI 3900 - Internship (1.0 - 2.0 cr)

**Post-Internship Seminar**
HSCI 3901 - Post-Internship Seminar (0.5 cr)

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 10 - 11 course(s) totaling exactly 33 credit(s) from the following:
- BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- HSCI 1123 - Fundamentals of Nutrition [BIOL SCI] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
- SOC 1001 - Introduction to Sociology [HI/BEH/SSC, HUMAN DIV] (3.0 cr)
- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
- or CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
- CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
- or COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
- PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)
- or PHYS 1101 - Introductory College Physics I [PHYS SCI] (4.0 cr)

**Technology**
If applicable, the course selected from below may be used to satisfy both the program and technology requirements.
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CA 1xxx
- CA 2xxx
- CHEM 3022 - Chemical Analysis in the Biological and Environmental Sciences (4.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

**Open Electives or Optional Recommended Electives**
Students must take enough open electives credits to meet the 120 credit graduation requirement. The following courses are suggestions recommendations for the exercise science and wellness major student. It is recommended students work with their advisor for appropriate elective selection.
Take 0 or more course(s) from the following:
- CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- PHIL 2002 - Introduction to Ethics [HUMANITIES, ETH/CIV RE] (3.0 cr)
• PSY 1093 - Lifespan Development [HI/BEH/SSC] (3.0 cr)
• PSY 2253 - Human Behavior and Diversity Issues (3.0 cr)
• SOC 3001 [Inactive] (3.0 cr)
• SOC 3937 - Social Gerontology: Elders in American Society (3.0 cr)
• SRM 3003 - Sport Facility and Activities Management (3.0 cr)
• SRM 3200 - Socio-Cultural Dimensions in Sport (3.0 cr)
The importance of finance for organizations today cannot be underestimated. The ability to understand the markets and how businesses raise and invest capital is highly looked upon among businesses and organizations. Finance is a very broad degree program covering such diverse topics as corporate finance, insurance and risk management, estate planning, investment and money, and banking and financial institutions. Organizations need individuals with the knowledge to calculate contemporary financial measures of performance and risk, as well as the ability to explain how the financial services component industries interact with each other. Graduates from this program will have the skills and experience to compete effectively for entry-level employment positions, such as financial analysts, personal financial advisers, actuaries and other positions in securities, commodities, and financial services.

Program outcomes for graduates:
- Describe the dimensions of performance and risk relevant to financial services companies
- Assess consumer financial needs and the mechanisms available for fulfilling these needs
- Describe and apply financial concepts, theories, and tools
- Evaluate the role of technology and the legal, ethical, and economic environment as it relates to financial services
- Prepare a personal financial plan for clients

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)
- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)
- partially online (between 50% to 80% of instruction is online)

Admission Requirements
For information about University of Minnesota admission requirements, visit the [Office of Admissions website](http://www.umn.edu).
### Electives
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ACCT 3220 - Accounting Systems (3.0 cr)
- ACCT 4405 - Income Tax II (3.0 cr)
- ACCT 4420 - Income Tax Preparation (3.0 cr)
- ACCT 4512 - CPA Review Course--Financial Reporting and Accounting (3.0 cr)
- AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
- HSM 3270 - Health Care Finance (3.0 cr)
- MGMT 4800 - Strategic Management (3.0 cr)
- SRM 3012 - Sport Finance and Economics (3.0 cr)
- COMM 3008 - Business Writing (3.0 cr)
  or COMM 3704 - Business and Professional Speaking (3.0 cr)

### Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 8 or more course(s) totaling 24 or more credit(s) from the following:
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  or MATH 1250 - Precalculus [MATH THINK] (4.0 cr)
  or MATH 1271 - Calculus I [MATH THINK] (4.0 cr)
  or MATH 1272 - Calculus II (4.0 cr)

### Technology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- AGEC 2310 - Agribusiness Financial Records (3.0 cr)
- CA 1020 - Spreadsheet Applications (3.0 cr)

### Open Electives
Students must take enough open electives credits to meet the 120 credit graduation requirement. The number of credits needed depends on liberal education course selections. Approximately 15 credits will be needed.

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

### Online
The online finance BS program's curriculum is identical to the on-campus finance BS program with the following exceptions:
- FIN 3900 (3 cr) moves from a Business Core to an Elective.
- Take 19 credits from Business Core instead of 22 credits.
- Take 6 credits from Electives instead of 3 credits.
**Crookston Campus**

**Finance Certificate**

*Business*

**Academic Affairs**

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 28 to 29
- Degree: Finance Certificate

The ability to understand the markets and how businesses raise and invest capital is a highly looked upon specialized background amongst businesses and organizations. The certificate in finance is a broad program covering such diverse topics as corporate finance, insurance and risk management, estate planning, investments and money, banking and financial institutions. Students completing this certificate may find employment working with banks, insurance companies, securities firms, commodity brokers, and other financial investments enterprises.

Please note that this certificate is available to individuals in the workforce that want a new career in finance and to non-University of Minnesota baccalaureate students who want additional credentialing.

**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**

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

**General Requirements**

All students are required to complete general University and college requirements. For more information, see the [graduation requirements](#).

**Program Requirements**

**Finance Core**

Take exactly 8 course(s) totaling 22 - 23 credit(s) from the following:
- ACCT 2101 - Principles of Accounting I (3.0 cr)
- ACCT 2102 - Principles of Accounting II (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- FIN 3105 - Corporate Finance (3.0 cr)
- FIN 3120 - Money, Financial Markets and Institutions (3.0 cr)
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
- Choose one of the following:
  - MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  - or MATH 1250 - Precalculus [MATH THINK] (4.0 cr)
- Choose one of the following:
  - AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
  - or FIN 3100 - Managerial Finance (3.0 cr)

**Finance Electives**

Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- ACCT 4404 - Income Tax I (3.0 cr)
- AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
- FIN 3110 - Estate Planning (3.0 cr)
- FIN 3115 - Insurance and Risk Management (3.0 cr)
- FIN 3125 - Investments (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Online
The ability to understand the markets and how businesses raise and invest capital is a highly looked upon specialized background amongst businesses and organizations. The certificate in finance is a broad program covering such diverse topics as corporate finance, insurance and risk management, estate planning, investments and money, banking and financial institutions. Students completing this certificate may find employment working with banks, insurance companies, securities firms, commodity brokers, and other financial investments enterprises.

Please note that this certificate is available to individuals in the workforce that want a new career in finance and to non-University of Minnesota baccalaureate students who want additional credentialing.

The finance certificate online has the same curriculum as the on-campus finance certificate.
Crookston Campus
Finance Minor

Business
Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 25

The finance minor is available on campus and online and focuses on tools to solve business problems while giving students insight to understand financial and economic behavior. As an employment sector with sustainable future growth, the minor enhances the career prospects of our graduates. Students will be introduced to the principles of finance and how to apply these principles to analyze several financial issues. Students will develop the problem-solving and quantitative skills that are widely used in business. The minor in finance is available to all undergraduate students at UMC. Several electives are offered to provide a specialized education for students seeking the finance minor.

Program outcomes:
- Describe the dimensions of performance and risk relevant to financial services companies;
- Assess consumer financial needs and the mechanisms available for fulfilling these needs;
- Describe and apply financial concepts, theories, and tools;
- Evaluate the role of technology and the legal, ethical, and economics environment as it relates to financial services;
- Develop personal financial plans for clients.

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)
- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)
- partially online (between 50% to 80% of instruction is online)

Minor Requirements
Finance Core
Take 7 or more course(s) totaling 19 or more credit(s) from the following:
- ACCT 2101 - Principles of Accounting I (3.0 cr)
- ACCT 2102 - Principles of Accounting II (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- FIN 3105 - Corporate Finance (3.0 cr)
- FIN 3120 - Money, Financial Markets and Institutions (3.0 cr)
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
- AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
  or FIN 3100 - Managerial Finance (3.0 cr)

Finance Electives
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- ACCT 3201 - Intermediate Accounting I (4.0 cr)
- ACCT 4404 - Income Tax I (3.0 cr)
- AGEC 2310 - Agribusiness Financial Records (3.0 cr)
- AGEC 3640 - Agricultural Finance and Valuation (3.0 cr)
- AGEC 4740 - Grain and Livestock Marketing (3.0 cr)
- FIN 3020 - International Financial Management (3.0 cr)
- FIN 3110 - Retirement and Estate Planning (3.0 cr)
- FIN 3115 - Insurance and Risk Management (3.0 cr)
- FIN 3125 - Investments (3.0 cr)
- FIN 3126 - Financial Modeling and Valuation (3.0 cr)
- HSM 3270 - Health Care Finance (3.0 cr)
- SRM 3012 - Sport Finance and Economics (3.0 cr)

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Information current as of August 09, 2021
Program Sub-plans
A sub-plan is not required for this program.

Online
The finance minor online has the same curriculum as the on-campus finance minor.

The finance minor focuses on tools to solve business problems while giving students insight to understand financial and economic behavior. As an employment sector with sustainable future growth, the minor enhances the career prospects of our graduates. Students will be introduced to the principles of finance and how to apply these principles to analyze several financial issues. Students will develop the problem-solving and quantitative skills that are widely used in business. The minor in finance is available to all undergraduate students at UMC. Several electives are offered to provide a specialized education for students seeking the finance minor.

Program outcomes:
- Describe the dimensions of performance and risk relevant to financial services companies;
- Assess consumer financial needs and the mechanisms available for fulfilling these needs;
- Describe and apply financial concepts, theories, and tools;
- Evaluate the role of technology and the legal, ethical, and economics environment as it relates to financial services;
- Develop personal financial plans for clients.
Crookston Campus
Golf and Turf Management B.S.
Agriculture and Natural Resources
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 67
- This program requires summer terms.
- Degree: Bachelor of Science

Golf course superintendents and turfgrass professionals use technology and talent to balance the needs of people with those of nature. The golf and turf management degree provides students with skills and experiences to build and maintain functional, and aesthetically pleasing turfgrass environments. Extensive coursework in plant science, horticulture, and turf management helps students develop the technical skills needed to be successful. Complementary courses in facility management and communication provide the fundamentals for managing employees and interacting with customers.

Student learning incorporates hands-on activities along with technological applications in a practical, career-oriented environment. Internships may be completed at golf courses, athletic fields, park and recreation areas, or with industry suppliers. Graduates will hold positions in the golf industry, sports field management, lawn care, sod production, grounds maintenance, sales, or pursue advanced degrees.

Program outcomes: graduates will
- Demonstrate competencies in turfgrass management
- Demonstrate problem-solving skills in relation to turfgrass pests and fertility issues
- Understand the use of integrated pest management and resource preservation
- Demonstrate an awareness of the need for continual professional development
- Demonstrate skills in written and oral communication and human resource management

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

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for courses under the program, major, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Golf and Turf Management Core
Take exactly 20 course(s) totaling exactly 55 credit(s) from the following:
- AGRO 2573 - Entomology (3.0 cr)
- AGRO 3230 - Introduction to Plant Pathology (3.0 cr)
- HORT 1010 - Introduction to Horticulture (3.0 cr)
- HORT 1021 - Woody Plant Materials (4.0 cr)
- HORT 3040 - Landscape Installation and Maintenance (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- NATR 4652 - Seminar (1.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)
- SOIL 3414 - Soil Fertility and Plant Nutrition (4.0 cr)
SPAN 1104 - Beginning Spanish I [GLOB PERSP] (4.0 cr)
TURF 1072 - Principles of Turf Management (3.0 cr)
TURF 3072 - Turfgrass Science (3.0 cr)
TURF 3073 - Sports Turf Management (3.0 cr)
TURF 3074 - Turfgrass Pest Management (3.0 cr)
TURF 3076 - Turfgrass Management Systems (3.0 cr)
Choose one of the following:
  BIOL 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
or
  BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)
Choose one of the following:
  COMM 3008 - Business Writing (3.0 cr)
or
  COMM 3431 - Persuasion (3.0 cr)
or
  WRIT 3303 - Writing in Your Profession (3.0 cr)
Pre-Internship Seminar
  NATR 2899 - Pre-Internship Seminar (0.5 cr)
or
  NATR 3899 - Pre-Internship Seminar (0.5 cr)
Internship
  Take 2 or more credit(s) from the following:
  • NATR 3900 - Internship (0.5 - 4.0 cr)
Post-Internship Seminar
  NATR 3901 - Post-Internship Seminar (0.5 cr)
Golf and Turf Management Electives
  Take 3 or more course(s) totaling 12 or more credit(s) from the following:
  • AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
  • ASM 1034 - Facility Maintenance and Safety (4.0 cr)
  • ASM 2043 - Welding and Manufacturing Processes (3.0 cr)
  • ASM 2250 - Agricultural Machinery Management (3.0 cr)
  • ASM 3009 - Surveying (4.0 cr)
  • BIOL 3131 - Plant Physiology (3.0 cr)
  • CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
  • HORT 1025 - Introduction to Arboriculture (2.0 cr)
  • HORT 3025 - Applications in Arboriculture (3.0 cr)
  • HORT 3030 - Landscape Design (4.0 cr)
  • HORT 3031 - Herbaceous Perennial Plant Materials (2.0 cr)
  • HORT 3034 - Commercial Floriculture Crops-Spring (4.0 cr)
  • HORT 3036 - Plant Propagation (4.0 cr)
  • HORT 3045 - Urban Forestry Planning and Management (3.0 cr)
  • MGMT 3200 - Principles of Management (3.0 cr)
  • MGMT 3220 - Human Resource Management (3.0 cr)
  • MGMT 3250 - Operations Management (3.0 cr)
  • NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)
  • NATR 3203 - Park and Recreation Management (3.0 cr)
  • NATR 3344 - Land Use Planning (3.0 cr)
  • NATR 3468 - Wildlife Habitat Management Techniques (3.0 cr)
  • PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)
  • SPAN 1204 - Beginning Spanish II [GLOB PERSP] (4.0 cr)
  • SRM 2020 - Foundations of Sport and Recreation Management (3.0 cr)
  • SRM 3003 - Sport Facility and Activities Management (3.0 cr)
  • SWM 3225 - Watershed Management (3.0 cr)
  • TURF 3078 - Integrated Turfgrass Diagnostics (1.0 - 3.0 cr)
Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 6 course(s) totaling exactly 20 credit(s) from the following:
  • BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
  • CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
  • COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
  • COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
  • COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
  • MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
or
  • MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CA 1xxx
- CA 2xxx

Open Electives
Students must take enough electives to meet the 120 credit graduation requirement. The number needed will depend on how a student satisfies the Minnesota Transfer Curriculum and major electives requirements. Approximately 9 credits will be needed.
Crookston Campus

Graphic Design Minor

Humanities, Social Sciences, and Education

Academic Affairs

• Program Type: Undergraduate free-standing minor
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 21

The graphic design minor is intended for students with a desire to enhance their academic major with the skills associated with graphic design. Courses will include an emphasis on visual communication, graphic applications, design, and branding fundamentals.

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)

Minor Requirements

Graphic Design Core

Take 6 or more course(s) totaling 18 or more credit(s) from the following:
• CA 1030 - Multimedia Applications (3.0 cr)
• SE 2400 - Software Engineering Approach to Human Computer Interaction (3.0 cr)
• COMM 3537 - Visual Communication (3.0 cr)
• COMM 4802 - Publication Design and Management (3.0 cr)
• MKTG 3230 - Digital Marketing (3.0 cr)
• MKTG 3700 - Branding & Design (3.0 cr)

Graphic Design Electives

Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ART 1152 - Drawing and Design [HUMANITIES] (3.0 cr)
• ART 1252 - Painting and Design [HUMANITIES] (3.0 cr)
• CA 1040 - Web Site Development (3.0 cr)
• COMM 3804 - Individual Studies (1.0 - 3.0 cr)
• ITM 3804 - Individual Studies (1.0 - 3.0 cr)
• MKTG 3804 - Individual Studies (1.0 - 3.0 cr)
• SE 3804 - Individual Studies (1.0 - 3.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Online

The online graphic design minor has the same curriculum as the on-campus program.
**Crookston Campus**

**Health Informatics for Software Engineers and IT Professionals Certificate**

*Math, Science and Technology*

**Academic Affairs**

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 22
- Degree: Hlth Infor Sftware Eng/IT Prof Certificate

This certificate will prepare students with an existing background in Information Technology, programming, and software engineering to apply their expertise to the domain of health informatics in order to build advanced Information Systems for health care and public health organizations.

**Program Learner Outcomes for the Certificate of Health Informatics for Software Engineers and IT Professionals**

- Understanding of how/why information systems are used in health care (HI 3020)
- Understanding of the use of health information workflow, analysis and design in supporting clinical decisions (HI 3100)
- Awareness of Social, Legal and Ethical Issues in Health Informatics (HI 3200)
- Awareness of Privacy and Security Policies around health informatics (HI 3215)
- Demonstrate understanding of health care organizations (HI 3300)
- Understanding of how to integrate, manipulate and query vast amounts of data for decision making (SE 3060)
- Apply software engineering knowledge to design systems in the health informatics domain,( HI 3300, SE 3060, HI 3100)

**Program Delivery**

This program is available:

- completely online (all program coursework can be completed online)

**Admission Requirements**

- Must be enrolled in or completed BS degree or higher in a computer science, software engineering, or information technology profession.
- Must have a GPA of 2.5 or above (on a 4.0 scale).
- Must provide an official transcript showing completion of a degree or current enrollment in a degree in computer science, software engineering, or information technology BS program.
- Must provide a current curriculum vitae (preferred) or resume.
- Must provide 2 letters of recommendation.
- Must provide a personal statement of goals and expected impacts of study.
- Must be proficient in English. If native language is not English, must take the TOEFL and score at least 586 (written), 240 (computerized), or 95 (IBT). TOEFL or MELAB exams taken within 3 years of the time of application will be accepted. If the TOEFL is not available in your country, you must take the Michigan English Language Assessment Battery (MELAB) and score at least 85.

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

**General Requirements**

All students are required to complete general University and college requirements. For more information, see the [graduation requirements](#).

**Program Requirements**

**Health Informatics for Software Engineers and IT Professionals Certificate**

Take exactly 8 course(s) totaling exactly 22 credit(s) from the following:

- HI 3020 - Introduction to Health Information Systems (3.0 cr)
- HI 3100 - Health Information Workflow Process Analysis and Design (3.0 cr)
- HI 3200 - Social, Legal, Ethical Issues in Health Informatics (3.0 cr)
- HI 3215 - Health Information Assurance and Security (3.0 cr)
- HI 3300 - Organization of EHR Systems (3.0 cr)
- HSM 1010 - Medical Terminology (2.0 cr)
- HSM 2010 - Introduction to the Health Care System (2.0 cr)
- SE 3060 - Data Warehousing and Mining (3.0 cr)

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Information current as of August 09, 2021
Crookston Campus
Health Informatics Privacy and Security for Health Care Providers Certificate

Math, Science and Technology

Academic Affairs

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 18
- Degree: Hlth Infor Priv & Sec Hlth Care Provider Cert

This certificate program will prepare students to support the secure collection, management, retrieval, exchange, and/or analysis of information in electronic form in health care and public health organizations.

Program Learner Outcomes for the Certificate of Health Informatics Privacy and Security for Health Care Providers

* Proficiency in Database principles (HI 2060)
* Understanding of how/why information systems are used in health care (HI 3020)
* Knowledge representation of secure data collection and retrieval (HI 3060)
* Understanding of the use of health information workflow, analysis and design in supporting clinical decisions (HI 3100)
* Awareness of Social, Legal and Ethical Issues in Health Informatics (HI 3200)
* Awareness of Privacy and Security Policies around health informatics (HI 3215)

Program Delivery
This program is available:
- completely online (all program coursework can be completed online)

Admission Requirements
- Must be enrolled in or completed a bachelor degree, or completed an associate degree in health, allied health, clinical lab science, or public health.
- Must have a GPA of 2.5 or above (on a 4.0 scale).
- Must provide an official transcript showing completion of a degree or current enrollment in a degree in a health or public health program.
- Must provide a current curriculum vitae (preferred) or resume.
- Must provide 2 letters of recommendation, preferably from current or previous health care place of employment or study.
- Must provide a personal statement of goals and expected impacts of study.
- Must be proficient in English. If native language is not English, must take the TOEFL and score at least 586 (written), 240 (computerized), or 95 (IBT). TOEFL or MELAB exams taken within 3 years of the time of application will be accepted. If the TOEFL is not available in your country, you must take the Michigan English Language Assessment Battery (MELAB) and score at least 85.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Health Informatics Privacy and Security for Health Care Providers Certificate
Take exactly 6 course(s) totaling exactly 18 credit(s) from the following:
- HI 2060 - Database Management in Health Information Systems (3.0 cr)
- HI 3020 - Introduction to Health Information Systems (3.0 cr)
- HI 3060 - Secure Data Collection and Retrieval (3.0 cr)
- HI 3100 - Health Information Workflow Process Analysis and Design (3.0 cr)
- HI 3200 - Social, Legal, Ethical Issues in Health Informatics (3.0 cr)
- HI 3215 - Health Information Assurance and Security (3.0 cr)
Crookston Campus
Health Management B.S.

Business
Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 62
• This program requires summer terms.
• Degree: Bachelor of Science

The health management program provides career-entry opportunities for high school graduates and professional advancement opportunities for health care personnel. Career opportunities for students with baccalaureate degrees in health management include management positions in hospitals, long-term care facilities, health maintenance and other managed care organizations, public health departments, community-based and home health agencies, medical equipment companies, government regulatory agencies, and health insurance companies.

The health management program focuses on developing managerial, administrative, and computer skills, supplementing those skills with an in-depth knowledge of the health care system. The program prepares graduates to offer managerial excellence to employers.

Long-term Care Administration--The health management program has been approved by the Minnesota Board of Examiners for Nursing Home Administrators and meets Minnesota regulations for long-term health care administration. Health management program graduates are eligible to take the Minnesota licensure examination for nursing home administration.

Program outcomes:

Communicate effectively and work as a team in a health care setting
Demonstrate leadership ability in problem solving, conflict resolution, and change management
Understand the legal, regulatory, and ethical issues inherent to health care
Show the ability to adapt to changing public policy, economic, and financial issues in health care
Demonstrate assessment skills related to improving clinical care and customer service
Understand technology and how to apply it to the workplace

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Health Management Core
Take exactly 21 course(s) totaling 62 - 64 credit(s) from the following:
ACCT 2101 - Principles of Accounting I (3.0 cr)
ACCT 2102 - Principles of Accounting II (3.0 cr)
GBUS 1005 - Orientation to Online Learning (1.0 cr)
HI 3020 - Introduction to Health Information Systems (3.0 cr)
HSM 1010 - Medical Terminology (2.0 cr)
HSM 2010 - Introduction to the Health Care System (2.0 cr)
HSM 3030 - Health Care and Medical Needs (3.0 cr)
HSM 3200 - Health Care Leadership and Planning (4.0 cr)
HSM 3240 - Health Care Policy and Comparative Systems (4.0 cr)
HSM 3250 - Performance Improvement in Health Care (3.0 cr)
HSM 3260 - Risk Management in Health Care (3.0 cr)
HSM 3270 - Health Care Finance (3.0 cr)
HSM 4210 - Health Care Law and Biomedical Ethics (4.0 cr)
HSM 4212 - Regulatory Management (3.0 cr)
HSM 4500 - Decision Making in Health Management (3.0 cr)
MGMT 3200 - Principles of Management (3.0 cr)
MGMT 3220 - Human Resource Management (3.0 cr)
MKTG 3300 - Principles of Marketing (3.0 cr)

Choose one of the following:
COMM 3008 - Business Writing (3.0 cr)
or
WRIT 3303 - Writing in Your Profession (3.0 cr)

Choose one of the following:
HSM 4215 - Medical Practice Management (3.0 cr)
or
HSM 3230 - Administration of the Long Term Care System (3.0 cr)

Up to 5 credits of HSM 3900 are required to be eligible to take Minnesota licensure examination (LNHA) for nursing home administration.
Take 3 or more credit(s) from the following:
- HSM 3900 - Internship (1.0 - 5.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)

Choose one of the following:
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
  or
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)

Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CA 1020 - Spreadsheet Applications (3.0 cr)

Open Electives or Optional LNHA Courses
Students must take enough open electives credits to meet the 120 credit graduation requirement. Approximately 13 to 15 credits will be needed.

Optional LNHA Courses
The following course is required for license as a nursing home administrator:
Take 0 or more credit(s) from the following:
- SOC 3937 - Social Gerontology: Elders in American Society (3.0 cr)

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

Online
The health management program provides career-entry opportunities for high school graduates and professional advancement opportunities for health care personnel. Career opportunities for students with baccalaureate degrees in health management include management positions in hospitals, long-term care facilities, health maintenance and other managed care organizations, public health departments, community-based and home health agencies, medical equipment companies, government regulatory agencies, and health insurance companies.

The health management program focuses on developing managerial, administrative, and computer skills, supplementing those skills with an in-depth knowledge of the health care system. The program prepares graduates to offer managerial excellence to employers.

Long-term Care Administration--The health management program has been approved by the Minnesota Board of Examiners for Nursing Home Administrators and meets Minnesota regulations for long-term health care administration.
graduates are eligible to take the Minnesota licensure examination for nursing home administration. The curriculum for the health management online program is the same as the classroom delivered program.

The health management online BS program has the same curriculum as the on-campus program.
Crookston Campus
Health Management Certificate

Business
Academic Affairs

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 21
• This program requires summer terms.

The Health Management certificate program will provide fundamental knowledge in the business of healthcare in such areas of finance, health information technology, healthcare law, ethics, group practice, and so on. The certificate will qualify participants to advance their management careers in hospitals, outpatient centers, physician group practices, managed care organizations, public health agencies, and other health-related organizations, utilizing customizable elective courses to best fit the educational need of the individual.

Program Delivery
This program is available:
• completely online (all program coursework can be completed 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

Application to the Health Management certificate program is required along with the completion of a High School diploma and a transcript demonstrating 45 semester credits with a 2.5 grade point average or better. Any applied course fees will be applied.

With approval of the program, up to 8 credits of transfer coursework from an accredited college can be applied for this 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. For more information, see the graduation requirements.

Program Requirements
Courses can transfer to the Health Management Bachelor of Science degree.

Health Management Core
Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:
• HSM 1010 - Medical Terminology (2.0 cr)
• HSM 2010 - Introduction to the Health Care System (2.0 cr)
• HSM 3030 - Health Care and Medical Needs (3.0 cr)
• HSM 3200 - Health Care Leadership and Planning (4.0 cr)
• HSM 4210 - Health Care Law and Biomedical Ethics (4.0 cr)

Health Management Electives
HSM 3240 and HSM 3270 have prerequisites.
Take 6 or more credit(s) from the following:
• HI 3020 - Introduction to Health Information Systems (3.0 cr)
• HSM 3240 - Health Care Policy and Comparative Systems (4.0 cr)
• HSM 3250 - Performance Improvement in Health Care (3.0 cr)
• HSM 3260 - Risk Management in Health Care (3.0 cr)
• HSM 3270 - Health Care Finance (3.0 cr)
• HSM 4212 - Regulatory Management (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Online
Crookston Campus
Health Management Minor
Humanities, Social Sciences, and Education
Academic Affairs

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 21

The health care management minor, delivered completely online, is designed to prepare undergraduate students with the conceptual knowledge for work in the healthcare field or graduate study. The asynchronous education will introduce students to the business of healthcare by augmenting other majors, allowing a competitive advantage of applying skills in a healthcare organization. This minor is designed for students of junior and senior status.

Program Delivery
This program is available:
• completely online (all program coursework can be completed online)

Minor Requirements
Health Management Core
Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:
• HSM 1010 - Medical Terminology (2.0 cr)
• HSM 2010 - Introduction to the Health Care System (2.0 cr)
• HSM 3030 - Health Care and Medical Needs (3.0 cr)
• HSM 3200 - Health Care Leadership and Planning (4.0 cr)
• HSM 4210 - Health Care Law and Biomedical Ethics (4.0 cr)

Health Management Electives
Take exactly 2 course(s) totaling 6 - 7 credit(s) from the following:
• HI 3020 - Introduction to Health Information Systems (3.0 cr)
• HSM 3240 - Health Care Policy and Comparative Systems (4.0 cr)
• HSM 3250 - Performance Improvement in Health Care (3.0 cr)
• HSM 3260 - Risk Management in Health Care (3.0 cr)
• HSM 3270 - Health Care Finance (3.0 cr)
• HSM 4212 - Regulatory Management (3.0 cr)

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

Online
The BS in health sciences provides students with the prerequisite knowledge and skills required for admission to professional programs in chiropractic, dentistry, medicine, occupational therapy, pharmacy, physical therapy. Admission is competitive and specific admission requirements, including courses and experiences, vary by professional program and institution. Completion of the BS does not guarantee admission to professional programs at the University of Minnesota or other universities. The course requirements shown are common to similar programs at other institutions; however, students are advised to check with their specific professional program to be sure all prerequisite courses are met. Most professional programs have additional admission requirements, and students are advised to contact the program(s) to which they plan to apply to identify all admission requirements.

Program outcomes: Graduates will explain and reconstruct the scientific method and apply this mode of inquiry in a laboratory setting; explain and apply basic principles of biology in a work setting; demonstrate teamwork skills; apply, critique, and synthesize protocols from current literature; demonstrate and critique effective communication skills orally and in writing; formulate proper data collection and analysis methods; interpret and practice professional and ethical behavior related to biological research; identify, provide examples, differentiate, and integrate current biology techniques into their scientific investigations; and produce evidence of their ability to be admitted into health science professional programs.

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

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Students work with their advisor to develop a program of study that meets their health science educational goals (pre-chiropractic, pre-dentistry, pre-medicine, pre-occupational therapy, pre-pharmacy, pre-physical therapy).

Health Sciences Pre-Professional Core
Take exactly 26 course(s) totaling 71 credit(s) from the following:
BIOL 2012 - General Zoology (4.0 cr)
BIOL 2032 - General Microbiology (4.0 cr)
BIOL 2103 - Human Anatomy and Physiology I (4.0 cr)
BIOL 2104 - Human Anatomy and Physiology II (4.0 cr)
BIOL 3022 - Principles of Genetics (3.0 cr)
BIOL 3027 - Cell Biology (3.0 cr)
CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
CHEM 1062 - Chemical Principles II (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
CHEM 2301 - Organic Chemistry I (3.0 cr)
CHEM 2302 - Organic Chemistry II (3.0 cr)
CHEM 2310 - Organic Chemistry Laboratory I (2.0 cr)
CHEM 2311 - Organic Chemistry Laboratory II (2.0 cr)
CHEM 3021 - Biochemistry (3.0 cr)
HSCI 4301 - Capstone: Problem Solving in Health Care Teams (1.0 cr)
HSM 4210 - Health Care Law and Biomedical Ethics (4.0 cr)
PHYS 1102 - Introductory College Physics II [PHYS SCI] (4.0 cr)
PSY 1093 - Lifespan Development [HI/BEH/SSC] (3.0 cr)
PSY 3604 - Abnormal Psychology (3.0 cr)
SOC 3937 - Social Gerontology: Elders in American Society (3.0 cr)
WRIT 3303 - Writing in Your Profession (3.0 cr)

Choose one of the following:
• BIOL 3140 - Histology (4.0 cr)
• BIOL 4361 - Developmental Biology (4.0 cr)

Pre-Internship Seminar
• HSCI 3899 - Pre-Internship Seminar (0.5 cr)

Internship
Take 2 or more credit(s) from the following:
• HSCI 3900 - Internship (1.0 - 2.0 cr)

Post-Internship Seminar
• HSCI 3901 - Post-Internship Seminar (0.5 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take exactly 11 course(s) totaling exactly 36 credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• MATH 1271 - Calculus I [MATH THINK] (4.0 cr)
• PHIL 1001 - Introduction to Philosophy [HUMANITIES, ETH/CIV RE] (3.0 cr)
• PHYS 1101 - Introductory College Physics I [PHYS SCI] (4.0 cr)
• PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
• Choose one of the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• Choose one of the following:
• ENGL 3001 - World Culture and Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
• HUM 3310 - Culture and Technology [HUMANITIES, GLOB PERSP] (3.0 cr)
• Choose one of the following:
• SOC 1001 - Introduction to Sociology [HI/BEH/SSC, HUMAN DIV] (3.0 cr)
• SOC 1102 - Cultural Anthropology [HI/BEH/SSC, GLOB PERSP] (3.0 cr)

Technology
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• CA 1xxx
• CHEM 3022 - Chemical Analysis in the Biological and Environmental Sciences (4.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough open electives credits to satisfy the 120 credit graduation requirement.
Crookston Campus

Honors
C Academic Affairs, Ofc of Academic Affairs

• Program Type: Other
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 15
• This program is 8 terms (4 years) long.

The Honors Program is a program of study for high-achieving on-campus students. Incoming first-year students with an ACT of 28 or higher and a high school GPA of 3.5 or higher are invited to join the program. Full-time, degree-seeking, on-campus students may also gain admission to the Honors Program after completing one or more semesters of coursework (i.e. at least twelve credits) with a college GPA of at least 3.3. Transfer students are eligible for the Honors Program after transferring in at least 30 college credits with a college GPA of at least 3.3. Students transferring credits from within the University of Minnesota system are eligible for the Honors Program after transferring in at least 30 credits with a GPA of at least 3.3. Other talented students may be invited to the program based on their leadership, research/creative work, and/or commitment to equity and diversity.

Completion of the Honors Program requires 15 credits including nine credits of required courses (see the draft of proposed curriculum below). Students must achieve an overall college GPA of at least 3.3 and complete at least 60 credits at the University of Minnesota Crookston in order to be recognized as an Honors Program graduate. Students transferring credits from within the University of Minnesota system must complete at least 30 credits at the University of Minnesota Crookston and an additional 40 credits within the University of Minnesota system. These students must achieve a final GPA of at least 3.3 in all University of Minnesota coursework in order to complete the UMC Honors Program. Students who complete the Honors Program will be recognized in the Commencement Program, and completion of the Honors Program will be noted on the students official transcript. Honors students have access to the Honors Lounge, located in Evergreen Hall.

Students wishing to enroll in an Honors course must be admitted to the Honors Program. If open seats in an Honors course remain, other students may register for the course with instructor permission and a recommendation from the students advisor.

Honors coursework is interdisciplinary and emphasizes critical thinking, leadership, and writing, in a global context. The Honors Program requires students to produce original research, scholarship, and/or creative work via the required Honors Thesis. Students may also use Undergraduate Research courses as Honors Program electives. The Honors Program encourages Study Abroad; although Study Abroad is not required, one or more Study Abroad courses will count toward the required 15 credits.

Please note, honors program admission decisions are University of Minnesota campus-specific. Students who transfer between campuses and wish to remain in an honors program would need to apply and be admitted to the honors program at the transferring institution (where applicable).

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. For more information, see the graduation requirements.

Program Requirements
Core
Take 6 or more credit(s) from the following:
• HON 1010 - Honors and Leadership Symposium (2.0 cr)
• HON 4010 - Proposal for Honors Essay, Research, or Creative Project (1.0 cr)
• HON 4030 - Honors Essay, Research, or Creative Project (3.0 cr)

Electives

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Information current as of August 09, 2021
A maximum of 6 credits may be obtained from GNED 2000, GNED 3000, and HON 3000. Take 9 or more credit(s) from the following:

- ANSC 2994 - Introductory Undergraduate Research in Animal Science (1.0 - 4.0 cr)
- ANSC 3994 - Undergraduate Research in Animal Science (1.0 - 4.0 cr)
- BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
- BIOL 2994 - Introductory Undergraduate Research (1.0 - 4.0 cr)
- BIOL 3994 - Undergraduate Research (1.0 - 4.0 cr)
- CHEM 2994 - Introductory Undergraduate Research (1.0 - 4.0 cr)
- CHEM 3994 - Undergraduate Research in Chemistry (1.0 - 4.0 cr)
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
- COMP 1011H - Honors: Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013H - Honors: Composition II [COMMUNICAT] (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- ED 3994 - Undergraduate Research in Education (1.0 - 3.0 cr)
- ENSC 2994 - Introductory Undergraduate Research (1.0 - 4.0 cr)
- ENSC 3994 - Undergraduate Research (1.0 - 4.0 cr)
- GBUS 2000 - Global Studies in Business [GLOB PERSP] (1.0 - 3.0 cr)
- GBUS 2994 - Introductory Undergraduate Research in Business (1.0 - 3.0 cr)
- GBUS 3000 - Global Seminar in Business [GLOB PERSP] (1.0 - 3.0 cr)
- GBUS 3994 - Undergraduate Research in Business (1.0 - 3.0 cr)
- GMST 2000 - International Travel Experience [GLOB PERSP] (1.0 - 3.0 cr)
- GMST 3000 - International Travel Experience [GLOB PERSP] (1.0 - 3.0 cr)
- GNAG 2000 - Global Studies in Agriculture and/or Natural Resources [GLOB PERSP] (1.0 - 3.0 cr)
- GNAG 3000 - Global Seminar in Agriculture and/or Natural Resources [GLOB PERSP] (1.0 - 3.0 cr)
- GNED 2000 - Global Study [GLOB PERSP] (1.0 - 3.0 cr)
- GNED 3000 - Global Seminar [GLOB PERSP] (1.0 - 3.0 cr)
- HON 2010 - Honors Option (1.0 cr)
- HON 3000 - Global Leadership Seminar (3.0 cr)
- HON 3010 - Honors Option (1.0 cr)
- HON 3030 - Honors Contract (1.0 cr)
- HON 3994 - Undergraduate Research (1.0 - 3.0 cr)
- HSCI 3994 - Undergraduate Research (1.0 - 4.0 cr)
- HSM 3900 - Internship (1.0 - 5.0 cr)
- HUM 2000 - Global Studies in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- HUM 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)
- HUM 3000 - Global Seminar in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- ITM 2994 - Introductory Undergraduate Research (1.0 - 4.0 cr)
- ITM 3994 - Undergraduate Research (1.0 - 4.0 cr)
- MATH 2994 - Introductory Undergraduate Research (1.0 - 4.0 cr)
- NATR 3994 - Undergraduate Research (1.0 - 3.0 cr)
- SE 2994 - Introductory Undergraduate Research (1.0 - 4.0 cr)
- SE 3994 - Undergraduate Research (1.0 - 4.0 cr)
- SOC 3005 - Sociology of the Family [HI/BEH/SSC, HUMAN DIV] (3.0 cr)
- WRIT 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)
- WRIT 3994 - Undergraduate Research in English (1.0 - 3.0 cr)
The BS in horticulture is a career-oriented program that combines science-based education, liberal arts education, and technical training. All horticulture students are introduced to botany, woody plants, entomology, plant pathology, and soil science as part of the program requirements. These courses together with liberal arts courses and program specific courses prepare students for careers in the green industry. Students select from three areas of emphasis: environmental landscaping, horticulture production, or urban forestry.

Program outcomes for graduates:
- Demonstrate competency in identification of plant species, diseases, pests, and disorders of horticultural plants
- Understand the use of horticultural plants for aesthetic improvement and sustainability of the environment
- Apply principles of plant science, nutrition, soils, and pest management, and exhibit an awareness of environmental health and safety issues
- Demonstrate an awareness of the need for continuing professional development
- Demonstrate communication skills, ability to make sound decisions, and willingness to work as part of a team in providing leadership and accountability
- Use computer technology to effectively communicate, manage, and enhance business operations

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. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Horticulture Core
Take exactly 31 credit(s) from the following:
- AGRO 3230 - Introduction to Plant Pathology (3.0 cr)
- HORT 1010 - Introduction to Horticulture (3.0 cr)
- HORT 1021 - Woody Plant Materials (4.0 cr)
- NATR 4652 - Seminar (1.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)
- SOIL 3414 - Soil Fertility and Plant Nutrition (4.0 cr)
- SPAN 1104 - Beginning Spanish I [GLOB PERSP] (4.0 cr)
- Choose one of the following:
  - COMM 3008 - Business Writing (3.0 cr)
  - COMM 3431 - Persuasion (3.0 cr)
  - WRIT 3303 - Writing in Your Profession (3.0 cr)
• Choose one of the following:
  • AGRO 2573 - Entomology (3.0 cr)
  or NATR 2573 - Entomology (3.0 cr)

Pre-Internship Seminar
Choose one of the following:
  • NATR 2899 - Pre-Internship Seminar (0.5 cr)
  or NATR 3899 - Pre-Internship Seminar (0.5 cr)

Internship
Take 2 or more credit(s) from the following:
  • NATR 3900 - Internship (0.5 - 4.0 cr)

Post-Internship Seminar
NATR 3901 - Post-Internship Seminar (0.5 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses. Take exactly 6 course(s) totaling exactly 20 credit(s) from the following:
  • BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
  • CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
  • COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
  • COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
  • COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Choose one of the following:
  • MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  or MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
  • AGEC 2310 - Agribusiness Financial Records (3.0 cr)
  • CA 1xxx
  • CA 2xxx

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

Environmental Landscaping
Environmental landscaping includes courses in landscape design, planning and development of residential and commercial landscapes, and plant science. Reducing impact on the environment and sustainability are a major focus as well as appropriate use of plants and proper installation and management of landscape features. Many students include business courses in their elective curriculum to prepare them for all aspects of the industry. Graduates are prepared to be a landscape designer, installer, or contractor. They may also choose landscape supply sales, nursery management, land reclamation, or garden center management.

Environmental Landscaping Core
Take 7 or more course(s) totaling 23 or more credit(s) from the following:
  • HORT 3030 - Landscape Design (4.0 cr)
  • HORT 3031 - Herbaceous Perennial Plant Materials (2.0 cr)
  • HORT 3034 - Commercial Floriculture Crops-Spring (4.0 cr)
  • HORT 3036 - Plant Propagation (4.0 cr)
  • HORT 3040 - Landscape Installation and Maintenance (3.0 cr)
  • TURF 1072 - Principles of Turf Management (3.0 cr)

Choose one of the following:
  • BIOL 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

Environmental Landscaping Electives
Take 3 or more course(s) totaling 12 or more credit(s) from the following:
  • ACCT 2101 - Principles of Accounting I (3.0 cr)
  • AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
  • ASM 1034 - Facility Maintenance and Safety (4.0 cr)
  • ASM 3009 - Surveying (4.0 cr)
  • CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
  • ENTR 2200 - Introduction to Entrepreneurship and Small Business (3.0 cr)
  • HORT 1025 - Introduction to Arboriculture (2.0 cr)
• HORT 3025 - Applications in Arboriculture (3.0 cr)
• HORT 3033 - Commercial Floriculture Crops-Fall (4.0 cr)
• HORT 3045 - Urban Forestry Planning and Management (3.0 cr)
• HORT 3090 - Advanced Landscape Design (3.0 cr)
• MGMT 3200 - Principles of Management (3.0 cr)
• MGMT 3210 - Supervision and Leadership (3.0 cr)
• MGMT 3220 - Human Resource Management (3.0 cr)
• MKTG 3300 - Principles of Marketing (3.0 cr)
• NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 3344 - Land Use Planning (3.0 cr)
• NATR 3364 - Plant Taxonomy (3.0 cr)
• NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
• SPAN 1204 - Beginning Spanish II [GLOB PERSP] (4.0 cr)
• TURF 3074 - Turfgrass Pest Management (3.0 cr)
• TURF 3076 - Turfgrass Management Systems (3.0 cr)

Open Electives
Students must take enough open electives credits to meet the 120 credit graduation requirement. The number of credits needed will depend on liberal education course selections. Approximately 8 credits will be needed.

Production Horticulture
Production horticulture concentrates on crops produced in greenhouses and nurseries. Students experience plant propagation, identification of herbaceous plants, cultivation of indoor and outdoor plants, and floral design. In greenhouse production courses, students produce crops that are sold to industry. Graduates are employed as greenhouse or nursery growers, garden center managers, garden designers, floral designers, and floriculture extension specialists. Faculty work with students to develop a plan of study tailored to the individual.

Production Horticulture Core
Take exactly 8 course(s) totaling exactly 26 credit(s) from the following:
• HORT 1091 - Indoor Flowering and Foliage Plants (2.0 cr)
• HORT 3030 - Landscape Design (4.0 cr)
• HORT 3031 - Herbaceous Perennial Plant Materials (2.0 cr)
• HORT 3033 - Commercial Floriculture Crops-Fall (4.0 cr)
• HORT 3034 - Commercial Floriculture Crops-Spring (4.0 cr)
• HORT 3036 - Plant Propagation (4.0 cr)
• NATR 3364 - Plant Taxonomy (3.0 cr)
• Choose one of the following:
  • BIOL 2020 - Plant Anatomy and Physiology [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or
  • BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or
  • BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

Production Horticulture Electives
Take 3 or more course(s) totaling 12 or more credit(s) from the following:
• ACCT 2101 - Principles of Accounting I (3.0 cr)
• AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
• AGRO 3023 - Plant Breeding and Genetics (4.0 cr)
• ASM 1034 - Facility Maintenance and Safety (4.0 cr)
• BIOL 3022 - Principles of Genetics (3.0 cr)
• CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
• ENTR 2200 - Introduction to Entrepreneurship and Small Business (3.0 cr)
• ENTR 3200 - Business Planning (3.0 cr)
• HORT 1092 - Floral Design (2.0 cr)
• HORT 3040 - Landscape Installation and Maintenance (3.0 cr)
• HORT 3090 - Advanced Landscape Design (3.0 cr)
• HORT 3093 - Advanced Floral Design and Florist Operations (2.0 cr)
• MGMT 3200 - Principles of Management (3.0 cr)
• MGMT 3210 - Supervision and Leadership (3.0 cr)
• MGMT 3220 - Human Resource Management (3.0 cr)
• MKTG 2200 - Personal Selling (3.0 cr)
• MKTG 3300 - Principles of Marketing (3.0 cr)
• SPAN 1204 - Beginning Spanish II [GLOB PERSP] (4.0 cr)
• TURF 1072 - Principles of Turf Management (3.0 cr)

Open Electives
Students must take enough open electives credits to meet the 120 credit graduation requirement. The number of credits needed will depend on liberal education course selections. Approximately 7 credits will be needed.
Urban Forestry
Urban forestry combines conservation and horticulture topics presented in an outdoor, applied setting. Different than focusing on large scale forests used for commercial purposes, urban forestry includes municipalities, park districts, utility companies, private homeowners, and commercial tree service companies; each utilizing trees for a different purpose. The tree care industry has grown extensively over the years and now includes conservation and management issues. Extensive employment opportunities are available nation-wide as society becomes more urbanized.

Urban Forestry Core
Take exactly 8 course(s) totaling exactly 25 credit(s) from the following:
- BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- ENTR 2200 - Introduction to Entrepreneurship and Small Business (3.0 cr)
- HORT 1025 - Introduction to Arboriculture (2.0 cr)
- HORT 3025 - Applications in Arboriculture (3.0 cr)
- HORT 3030 - Landscape Design (4.0 cr)
- HORT 3040 - Landscape Installation and Maintenance (3.0 cr)
- HORT 3045 - Urban Forestry Planning and Management (3.0 cr)
- NATR 1244 - Elements of Forestry (4.0 cr)

Urban Forestry Electives
Take 3 or more course(s) totaling 12 or more credit(s) from the following:
- ACCT 2101 - Principles of Accounting I (3.0 cr)
- AGRO 2640 - Applied Agriculture Chemicals (3.0 cr)
- ASM 1034 - Facility Maintenance and Safety (4.0 cr)
- ASM 3009 - Surveying (4.0 cr)
- BIOL 3131 - Plant Physiology (3.0 cr)
- CHEM 1401 - Elementary Bioorganic Chemistry [PHYS SCI] (4.0 cr)
- HORT 3034 - Commercial Floriculture Crops-Spring (4.0 cr)
- HORT 3036 - Plant Propagation (4.0 cr)
- HORT 3090 - Advanced Landscape Design (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)
- NATR 3203 - Park and Recreation Management (3.0 cr)
- NATR 3344 - Land Use Planning (3.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- NATR 4699 - Integrated Resource Management (3.0 cr)
- SPAN 1204 - Beginning Spanish II [GLOB PERSP] (4.0 cr)
- TURF 1072 - Principles of Turf Management (3.0 cr)

Open Electives
Students must take enough open electives credits to meet the 120 credit graduation requirement. The number of credits needed will depend on liberal education course selections. Approximately 9 credits will be needed.
Crookston Campus
Horticulture Minor
Agriculture and Natural Resources
Academic Affairs

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 18
• none

The horticulture minor provides an opportunity for students in other majors (e.g., natural resources related, agronomy, ag business, business management, golf and turf management) to take a selected group of horticulture courses and strengthen their credentials in this area.

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

Minor Requirements
Horticulture Core
Take exactly 4 course(s) totaling exactly 15 credit(s) from the following:
• HORT 1010 - Introduction to Horticulture (3.0 cr)
• HORT 1021 - Woody Plant Materials (4.0 cr)
• HORT 3036 - Plant Propagation (4.0 cr)
• Choose one of the following:
  • HORT 3033 - Commercial Floriculture Crops-Fall (4.0 cr)
  or HORT 3034 - Commercial Floriculture Crops-Spring (4.0 cr)

Horticulture Electives
Take 3 or more credit(s) from the following:
• HORT 3030 - Landscape Design (4.0 cr)
• HORT 3031 - Herbaceous Perennial Plant Materials (2.0 cr)
• HORT 1091 - Indoor Flowering and Foliage Plants (2.0 cr)
• HORT 1092 - Floral Design (2.0 cr)
• HORT 3093 - Advanced Floral Design and Florist Operations (2.0 cr)
• HORT 3040 - Landscape Installation and Maintenance (3.0 cr)
Crookston Campus
Humanities Minor
Humanities, Social Sciences, and Education
Academic Affairs

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 19
- This program requires summer terms.

A minor in humanities allows students to gain a greater understanding of disciplines, such as art, history, literature, philosophy, politics, and theater. Students become aware of the importance and benefit of diversity and multiculturalism.

The humanities minor is intended to complement major programs of study presently offered at UMC. A minor in humanities helps students broaden and balance their chosen majors with skills such as creative thinking and expression. The minor enables students to recognize opportunities, think creatively, assemble resources, and plan and implement new initiatives in a wide variety of employment settings.

As graduates secure employment or start ventures of their own, they will demonstrate how awareness of the humanities adds value and enhances the results for the organizations they serve. Study in the humanities encourages students to think outside of the box and creativity, skills that are highly desirable to employers.

Program Outcomes

Students will:
1. Demonstrate awareness of the scope and variety of works in the arts and humanities;
2. Expand knowledge of the human condition and human cultures, especially in relation to behavior, ideas, and values expressed in works of human imagination and thought;
3. Understand those works as expressions of individual and human values within historical and social context;
4. Respond critically to works in the arts and humanities;
5. Engage in the creative process or interpretive performance;
6. Articulate an informed personal reaction to works in the arts and humanities.

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)

Minor Requirements

Humanities Core
Take 3 or more credit(s) from the following:
- HUM 1301 - Introduction to Humanities [HUMANITIES] (3.0 cr)
- HUM 2000 - Global Studies in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
- Take 3 or more credit(s) from the following:
  - HUM 3310 - Culture and Technology [HUMANITIES, GLOB PERSP] (3.0 cr)
  - HUM 3000 - Global Seminar in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)

Humanities Electives
The upper-division electives overlap with the courses listed in the content areas.
Take exactly 4 course(s) totaling 12 or more credit(s) from the following:

Communication/Literature
Take 3 or more credit(s) from the following:
- ED 3301 - Creating Meaning Through Literature and Arts (4.0 cr)
- ENGL 1005 - Introduction to World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 1016 - American Literature: Race, Gender, Class, and the American Dream [HUMANITIES, HUMAN DIV] (3.0 cr)
- ENGL 1017 - British Literature [HUMANITIES] (3.0 cr)
- ENGL 3001 - World Culture and Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 2000 - Topics in Literature (3.0 cr)
- ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
• ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
• ENGL 4000 - Intercultural Literature: Conversations between Cultures [HUMANITIES, HUMAN DIV] (3.0 cr)
• TH 2434 - Oral Interpretation and Performance Techniques [HUMANITIES] (3.0 cr)
• WRIT 2335 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)

**History/Philosophy**
Take 3 or more credit(s) from the following:
• HIST 1021 - World Civilization I [GLOB PERSP] (3.0 cr)
• HIST 1022 - World Civilization II [GLOB PERSP] (3.0 cr)
• HIST 1301 - American History I [HI/BEH/SSC] (3.0 cr)
• HIST 1302 - American History II [HI/BEH/SSC] (3.0 cr)
• HIST 3054 - Topics in History (3.0 cr)
• PHIL 1001 - Introduction to Philosophy [HUMANITIES, ETH/CIV RE] (3.0 cr)
• PHIL 2002 - Introduction to Ethics [HUMANITIES, ETH/CIV RE] (3.0 cr)

**Art/Culture and Diversity/Music**
The same course cannot satisfy both the core and elective requirements.
Take 3 or more credit(s) from the following:
• ART 1152 - Drawing and Design [HUMANITIES] (3.0 cr)
• ART 1252 - Painting and Design [HUMANITIES] (3.0 cr)
• ART 1352 - Pottery Design and Techniques [HUMANITIES] (3.0 cr)
• COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
• GNED 2000 - Global Study [GLOB PERSP] (1.0 - 3.0 cr)
• GNED 3000 - Global Seminar [GLOB PERSP] (1.0 - 3.0 cr)
• HUM 2000 - Global Studies in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
• HUM 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)
• HUM 3000 - Global Seminar in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
• MUS 1021 - Introduction to Music [HUMANITIES, HUMAN DIV] (3.0 cr)
• MUS 3027 - Rock and Jazz Music Styles [HUMANITIES, HUMAN DIV] (3.0 cr)
• MUS 3028 - Survey of American Musical Theater (3.0 cr)

**Upper-Division Electives**
These courses overlap with the courses listed in the content areas.
The same course cannot satisfy both the core and elective requirements.
Take 3 or more credit(s) from the following:
• COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
• ED 3301 - Creating Meaning Through Literature and Arts (4.0 cr)
• ENGL 3001 - World Culture and Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
• ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
• ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
• ENGL 4000 - Intercultural Literature: Conversations between Cultures [HUMANITIES, HUMAN DIV] (3.0 cr)
• GNED 3000 - Global Seminar [GLOB PERSP] (1.0 - 3.0 cr)
• HIST 3054 - Topics in History (3.0 cr)
• HUM 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)
• HUM 3000 - Global Seminar in Humanities [HUMANITIES, GLOB PERSP] (1.0 - 3.0 cr)
• MUS 3027 - Rock and Jazz Music Styles [HUMANITIES, HUMAN DIV] (3.0 cr)
• MUS 3028 - Survey of American Musical Theater (3.0 cr)

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

**Online**
The curriculum for the Humanities Minor Online includes all 18 credits listed for the on-campus Humanities Minor plus 1 credit for GBUS 1005 - Orientation to Online Learning.

**Online Learning Requirement**
GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus

Information Technology Management B.S.
Math, Science and Technology

Academic Affairs

• Program Type: Baccalaureate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 120
• Required credits within the major: 54 to 55
• This program requires summer terms.
• Degree: Bachelor of Science

The information technology management program prepares students for technical and management positions in business and industry. Graduates have the knowledge, experience, and skills to succeed in technology related careers as well as the business and management competencies for mid-management positions such as information technology specialists, application developers, network administrators, Webmasters, technology project and information systems managers.

Program outcomes

Graduates will:
• Demonstrate abilities in the use of information systems hardware, operating systems, programming languages, and application software
• Use computer technology in preparing programs, presentations, and written reports
• Demonstrate the ability to communicate clearly and concisely in written and oral communications through technical reports, solutions to information technology problems, and feasibility studies
• Demonstrate human relations and career/life adaptability skills in problem solving, decision making, and responding to change
• Demonstrate an environmental perspective in the development of solutions for business and information technology problem solving
• Demonstrate global and ethical perspectives in information technology management
• Demonstrate an understanding of the role of finance, marketing, and management as job responsibilities of the information technology professional

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

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

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Information Technology Management Core

Take 18 courses totaling 54 credit from the following:

ACCT 2101 - Principles of Accounting I (3.0 cr)
ACCT 2102 - Principles of Accounting II (3.0 cr)
FIN 3100 - Managerial Finance (3.0 cr)
GBUS 3107 - Legal Environment in Business (3.0 cr)
ITM 3020 - Introduction to Management Information Systems (3.0 cr)
ITM 3110 - Microcomputer Operating Systems (3.0 cr)
ITM 3130 - Messaging Systems (3.0 cr)

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Information current as of August 09, 2021
ITM 4020 - Analysis and Design of Information Systems (3.0 cr)
ITM 4900 - Senior Project in Information Technology Management (3.0 cr)
MGMT 3200 - Principles of Management (3.0 cr)
MKTG 3300 - Principles of Marketing (3.0 cr)
NT 3120 - Networking Standards and Protocols (3.0 cr)
NT 3215 - Information Assurance and Systems Security (3.0 cr)
SE 2050 - Introduction to Programming I (3.0 cr)
SE 2100 - Microcomputer Systems Architecture (3.0 cr)
SE 3050 - Database Management Systems (3.0 cr)

Choose one of the following:
MGMT 4200 - Project Management (3.0 cr)
or SE 4200 - Software Project Management (3.0 cr)

Internship
Take 3 or more credit(s) from the following:
• ITM 3900 - Internship (1.0 - 3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 6 or more course(s) totaling 19 or more credit(s) from the following:
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• HUM 3310 - Culture and Technology [HUMANITIES, GLOB PERSP] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)

• Choose one of the following:
  • PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)
  or PHYS 1101 - Introductory College Physics I [PHYS SCI] (4.0 cr)

Technology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• CA 1040 - Web Site Development (3.0 cr)

Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Students are encouraged to consider the following minors, or courses from the following minors, as well as the Honors program, to complete their elective requirements: Programming, Cybersecurity, Graphic Design, Management, Finance, Accounting, International Business, Leadership, and Communication.

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

Online
The information technology management program prepares students for technical and management positions in business and industry. Graduates have the knowledge, experience, and skills to succeed in technology related careers as well as the business and management competencies for mid-management positions such as information technology specialists, application developers, network administrators, Webmasters, technology project, and information systems managers. The ITM (Online) program has the same curriculum as the on-campus ITM program with the exception of a one-credit orientation to online learning.

Orientation to Online Learning
Take 1 or more course(s) totaling 1 or more credit(s) from the following:
• GBUS 1005 - Orientation to Online Learning (1.0 cr)
Information Technology Management Minor
Math, Science and Technology

**Academic Affairs**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 19

An information technology management minor gives students a general background in technology, computer applications, services, and systems.

Students completing the information technology management minor will:
- use computer technology in preparing programs, presentations, and written reports
- demonstrate the ability to communicate clearly and concisely in written and oral communications through technical reports, solutions to information technology problems, and feasibility studies
- demonstrate human relations and career/life adaptability skills in problem solving, decision making, and responding to change
- demonstrate an environmental perspective in the development of solutions for business and information technology problem solving
- demonstrate global and ethical perspectives in information technology management

**Program Delivery**

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

**Minor Requirements**

**Information Technology Management Core**
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- SE 2050 - Introduction to Programming I (3.0 cr)
- SE 3050 - Database Management Systems (3.0 cr)
- ITM 3110 - Microcomputer Operating Systems (3.0 cr)

**Information Technology Management Electives**
Take 9 or more credit(s) from the following:
- SE 2070 - Introduction to Programming II (3.0 cr)
- NT 3120 - Networking Standards and Protocols (3.0 cr)
- ITM 3130 - Messaging Systems (3.0 cr)
- ITM 3190 - Topics in Information Technology Management (3.0 cr)
- NT 3215 - Information Assurance and Systems Security (3.0 cr)
- ITM 4020 - Analysis and Design of Information Systems (3.0 cr)

**Program Sub-plans**

A sub-plan is not required for this program.

**Online**
An information technology management minor gives students a general background in technology, computer applications, services, and systems.

Students completing the information technology management minor will:
- use computer technology in preparing programs, presentations, and written reports
demonstrate the ability to communicate clearly and concisely in written and oral communications through technical reports, solutions to information technology problems, and feasibility studies

demonstrate human relations and career/life adaptability skills in problem solving, decision making, and responding to change

demonstrate an environmental perspective in the development of solutions for business and information technology problem solving

demonstrate global and ethical perspectives in information technology management

The Information Technology Management Minor Online has the same curriculum as the on-campus Information Technology Management Minor with the exception of a one-credit technology requirement.

**Technology**

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

- GBUS 1005 - Orientation to Online Learning (1.0 cr)
International Business B.S.

Business
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 55
- This program requires summer terms.
- Degree: Bachelor of Science

The need for graduates with skills to streamline global pursuits of companies that trade, manufacture, or use contract manufacturing globally is growing. The international business major is designed to ensure that students cultivate their global mindset. Classes like international business cultures and etiquette, international business law, international financial management, international marketing, international business management, and senior seminar in international business strategy are combined with field experience in international business and/or study abroad, which are included in the curriculum to broaden graduates' understanding of global business operations. Opportunities to travel and study outside the United States allow students to develop skills for functioning in different cultures, societies, and economic environments, and to understand a wide variety of international business practices.

Many different positions are available for graduates of international business; for example, supply chain management, operations management, human resources management, sales and marketing, financial management, as a contract worker, or as an entrepreneur. Positions in international business will be focused on management of foreign nationals working in the US, or US workers working in a foreign country. The other aspect of international business will focus upon the negotiations between your company and representatives of another country who will be the intermediary between your company and your ultimate consumers.

Increasing demand for high quality international business graduates is driving the upward trend of salaries paid. The curriculum allows students to incorporate subjects focused on their specific interest and international positions in marketing, financial management, supply chain management, technology services, human resource management, and many other traditional business support and leadership occupations.

Graduates could also work at federal agencies including the International Trade Administration and the Foreign Service as part of the US Department of Commerce.

Program Learning Outcomes:

Outcome 1. Solve problems related to the international context of finance, management, marketing, economics, accounting, and technology.

Outcome 2. Evaluate the global forces that shape our world in socio-economic cultural and political contexts.

Outcome 3. Integrate general and international business skills for effective problem-solving.

Outcome 4. Apply cross-disciplinary qualitative and quantitative information to problem resolution and opportunity identification.

Outcome 5. Demonstrate appropriate communication skills in presentation and negotiating environments, and understand the impact of culture on communication.

Outcome 6. Contribute to and work within cross-functional and cross-cultural teams.

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
For information about University of Minnesota admission requirements, visit the Office of Admissions website.
General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
A minimum of 40 upper-division credits are required to graduate.

A maximum of two D grades are allowed for courses under business, international business, language and/or foreign experience, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Business Core
Take 7 or more course(s) totaling 19 or more credit(s) from the following:
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
- GBUS 3500 - Business Ethics (3.0 cr)
- ITM 3020 - Introduction to Management Information Systems (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- Choose one of the following:
  - ACCT 2010 - Financial Accounting (3.0 cr)
  or
  - ACCT 2101 - Principles of Accounting I (3.0 cr)
- Choose one of the following:
  - ACCT 2102 - Principles of Accounting II (3.0 cr)
  or
  - ACCT 3010 - Managerial Accounting (3.0 cr)

International Business Core
Take 10 or more course(s) totaling 30 or more credit(s) from the following:
- COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
- FIN 3100 - Managerial Finance (3.0 cr)
- FIN 3120 - Money, Financial Markets and Institutions (3.0 cr)
- IBUS 2010 - International Dimensions in Business and Culture [GLOB PERSP] (3.0 cr)
- IBUS 3010 - International Business Law (3.0 cr)
- IBUS 3020 - International Financial Management (3.0 cr)
- IBUS 3360 - International Marketing (3.0 cr)
- IBUS 3500 - International Business Management (3.0 cr)
- IBUS 4800 - Senior Seminar in International Business Strategy (3.0 cr)
- MGMT 3255 - Logistics and Supply Chain Management (3.0 cr)

International Experience and Studies Electives
Field Experience in International Business is recommended.
Students may also transfer in collegiate foreign language experience from another campus, college or university.
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- ENGL 1005 - Introduction to World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3001 - World Culture and Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3005 - Ancient to 17th Century World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- ENGL 3006 - 18th Century to Contemporary World Literature [HUMANITIES, GLOB PERSP] (3.0 cr)
- GEOG 1104 - World Regional Geography [HI/BEH/SSC, GLOB PERSP] (3.0 cr)
- GBUS 3000 - Global Seminar in Business [GLOB PERSP] (1.0 - 3.0 cr)
- IBUS 3201 - Study Abroad in International Business (1.0 - 6.0 cr)
- IBUS 3900 - Field Experience in International Business (1.0 - 6.0 cr)
- SOC 1102 - Cultural Anthropology [HI/BEH/SSC, GLOB PERSP] (3.0 cr)
- SPAN 1104 - Beginning Spanish I [GLOB PERSP] (4.0 cr)
- SPAN 1204 - Beginning Spanish II [GLOB PERSP] (4.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take 10 or more course(s) totaling 30 or more credit(s) from the following:
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
- COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
- ECON 1010 - Global Trade Economics [GLOB PERSP] (3.0 cr)
- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- CA 1020 - Spreadsheet Applications (3.0 cr)

Open Electives
Students must take enough open electives credits to satisfy the 120 credit graduation requirement

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

Online
The curriculum for the International Business B.S. Online is identical to the on-campus International Business B.S. program.
Crookston Campus

International Business Minor

Business

Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18

The minor in international business is available on campus and online to allow graduates in any major to expand their work opportunities to include the numerous positions advertised by corporations that outsourced or off-shored part of their operations. Positions in international business are projected to grow and the minor will enhance the career prospects of our graduates. Students will be introduced to international business cultures and etiquette, international business law, international financial management, international marketing, international business management, and logistics and supply chain management. The academic grounding is combined with field experience in international business, or study abroad, or a foreign language requirement to broaden graduates’ understanding of global business operations.

Program outcomes

Students who earn a minor in international business will be able to:
- Evaluate the global forces that shape our world in socio-economic cultural and political contexts
- Integrate general and international business skills for effective problem-solving
- Apply cross-disciplinary qualitative and quantitative information to problem resolution and opportunity identification
- Use oral communication skills in presentation and negotiating environments, and understand the impact of culture on communication
- Contribute to and work within cross-functional and cross-cultural teams
- Use computer applications to facilitate international business opportunities

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)

Minor Requirements

Business Core

Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- MGMT 3200 - Principles of Management (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)

International Business Core

Take 3 or more course(s) totaling 9 or more credit(s) from the following:
- IBUS 3020 - International Financial Management (3.0 cr)
- IBUS 3360 - International Marketing (3.0 cr)
- IBUS 3500 - International Business Management (3.0 cr)

International Experience and Studies Electives

Take 3 or more credit(s) from the following:
- GBUS 3000 - Global Seminar in Business [GLOB PERSP] (1.0 - 3.0 cr)
- IBUS 3010 - International Business Law (3.0 cr)
- IBUS 3201 - Study Abroad in International Business (1.0 - 6.0 cr)
- IBUS 3900 - Field Experience in International Business (1.0 - 6.0 cr)
- MGMT 3255 - Logistics and Supply Chain Management (3.0 cr)
- SPAN 1104 - Beginning Spanish I [GLOB PERSP] (4.0 cr)
- SPAN 1204 - Beginning Spanish II [GLOB PERSP] (4.0 cr)

Program Sub-plans

A sub-plan is not required for this program.
Online
The curriculum for the International Business Minor Online is identical to the on-campus International Business Minor.
Crookston Campus
Leadership Minor
Business
Academic Affairs

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 20

Graduates with a Leadership Minor will develop a personal leadership philosophy that will help them fulfill their future roles and responsibilities as visionary leaders. The intent of the Leadership Minor is to be interdisciplinary so it can be incorporated into any current or future major.

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)

Minor Requirements
Leadership Core
Take exactly 4 course(s) totaling exactly 11 credit(s) from the following:
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- LEAD 1010 - Honors and Leadership Symposium (2.0 cr)
- LEAD 4800 - Leadership Minor Capstone (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)

Electives
Take 9 or more credit(s) from the following:
- AGEC 1005 - World Agricultural Food Systems (3.0 cr)
- AGEC 4460 - International Marketing Problems and Practices (3.0 cr)
- COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)
- COMM 2002 - Interpersonal Communication [COMMUNICAT] (3.0 cr)
- COMM 3000 - Communication Theory (3.0 cr)
- COMM 3704 - Business and Professional Speaking (3.0 cr)
- COMM 4007 - Political Communication (3.0 cr)
- COMM 4704 - Organizational Communication (3.0 cr)
- COMM 4800 - Crisis Communication (3.0 cr)
- COMM 4900 - Public Relations (3.0 cr)
- GBUS 3500 - Business Ethics (3.0 cr)
- ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
- HSCI 3001 - Community Health and Wellness (3.0 cr)
- HSM 3200 - Health Care Leadership and Planning (4.0 cr)
- HON 3000 - Global Leadership Seminar (3.0 cr)
- LEAD 3804 - Individual Studies (1.0 - 3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3215 - Organizational Behavior (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- PHIL 2002 - Introduction to Ethics [HUMANITIES, ETH/CIV RE] (3.0 cr)
- PHIL 3003 - Applied Ethics (3.0 cr)
- POL 1001 - American Government [ETH/CIV RE] (4.0 cr)
- POL 1054 - Comparative Government (3.0 cr)
- SRM 3008 - Sport Ethics and Leadership (3.0 cr)
- HIST 1021 - World Civilization I [GLOB PERSP] (3.0 cr)
  or HIST 1301 - American History I [HI/BEH/SSC] (3.0 cr)
- HIST 1022 - World Civilization II [GLOB PERSP] (3.0 cr)
  or HIST 1302 - American History II [HI/BEH/SSC] (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Online
The Leadership Minor Online has the same curriculum as the on-campus minor.
All organizations require managers to plan, organize, lead, and evaluate the organization's effectiveness. Businesses need individuals who can manage resources, identify and solve problems, work with others, understand markets, collect and analyze data, and evaluate organizational performance.

This program prepares graduates for management positions in corporations, small businesses, and other organizations. It provides a well-rounded education in business operations, preparing individuals for a variety of management positions in business and government.

Program outcomes:
- Demonstrate analytical and critical-thinking skills with direct application to business environments;
- Demonstrate the ability to communicate clearly and concisely in personal and business communication;
- Demonstrate capability to effectively manage human relations and diversity in professional and business environments;
- Demonstrate capability to apply global multidisciplinary concepts in business and industry;
- Demonstrate skill in the use of technology and computer software applications in business and industry;
- Demonstrate capability to apply ethical and environmental values to general business principles and practices.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Management Core
Take 19 courses totaling 53-54 credits from the following:
- ACCT 2101 - Principles of Accounting I (3.0 cr)
- ACCT 2102 - Principles of Accounting II (3.0 cr)
- FIN 3100 - Managerial Finance (3.0 cr)
- GBUS 3100 - Career & Professional Development (1.0 cr)
- GBUS 3107 - Legal Environment in Business (3.0 cr)
- GBUS 3500 - Business Ethics (3.0 cr)
- IBUS 3500 - International Business Management (3.0 cr)
- ITM 3020 - Introduction to Management Information Systems (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3215 - Organizational Behavior (3.0 cr)
MGMT 3220 - Human Resource Management (3.0 cr)
MGMT 3250 - Operations Management (3.0 cr)
MGMT 3600 - Change, Creativity, and Innovation Management (3.0 cr)
MGMT 4200 - Project Management (3.0 cr)
MGMT 4800 - Strategic Management (3.0 cr)
MKTG 3300 - Principles of Marketing (3.0 cr)

Choose one of the following:
- COMM 3008 - Business Writing (3.0 cr)
- or COMM 3704 - Business and Professional Speaking (3.0 cr)

Students not required to take UMC 1200 may choose from the following:
- Take 1 or more course(s) totaling 1 - 2 credit(s) from the following:
  - GBUS 1005 - Orientation to Online Learning (1.0 cr)
  - UMC 1200 - Introduction to University Life [CR THINKG] (2.0 cr)
- Take 1 or more course(s) totaling exactly 3 credit(s) from the following:
  - MGMT 3900 - Internship (1.0 - 3.0 cr)

Electives
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- BM 3025 - Lean Six Sigma (4.0 cr)
- GBUS 3000 - Global Seminar in Business [GLOB PERSP] (1.0 - 3.0 cr)
- GBUS 3300 - Business Analytics (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- MGMT 3255 - Logistics and Supply Chain Management (3.0 cr)
- MKTG 4100 - Retail Management (3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
- Take 8 or more course(s) totaling 24 or more credit(s) from the following:
  - COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
  - COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
  - ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
  - ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
  - MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
  - PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)
  - GBUS 1005 - Orientation to Online Learning [CR THINKG] (1.0 cr)
  - UMC 1200 - Introduction to University Life [CR THINKG] (2.0 cr)
- Take 1 or more course(s) totaling 3 or more credit(s) from the following:
  - MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
  - MATH 1142 - Survey of Calculus [MATH THINK] (3.0 cr)
  - MATH 1250 - Precalculus [MATH THINK] (4.0 cr)
  - MATH 1271 - Calculus I [MATH THINK] (4.0 cr)

Technology
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- CA 1020 - Spreadsheet Applications (3.0 cr)

Open Electives
Students must take enough electives credits to satisfy the 120 credit graduation requirement. Exact number will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

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

Online
All organizations require managers to plan, organize, lead, and evaluate the organization’s effectiveness. Businesses need individuals who can manage resources, identify and solve problems, work with others, understand markets, collect and analyze data, and evaluate organizational performance.

This program prepares graduates for management positions in corporations, small businesses, and other organizations. It provides a well-rounded education in business operations, preparing individuals for a variety of management positions in business and government.

Program outcomes:
Demonstrate analytical and critical-thinking skills with direct application to business environments;
Demonstrate the ability to communicate clearly and concisely in personal and business communication;
Demonstrate capability to effectively manage human relations and diversity in professional and business environments;
Demonstrate capability to apply global multidisciplinary concepts in business and industry;
Demonstrate skill in the use of technology and computer software applications in business and industry;
Demonstrate capability to apply ethical and environmental values to general business principles and practices.

The curriculum of the online Management BS program is identical to the on-campus Management BS program with the following exceptions:

Online students have the option to take either MGMT 3900 Internship (3 cr) or an additional 3 credits from the list of program electives as follows:

Electives
Take two courses (instead of 1 course) for a minimum of 6 credits from the following:
- BM 3025 Lean Six Sigma (4 cr)
- GBUS 3000 Global Seminar (1-3 cr)
- GBUS 3300 Business Analytics (3 cr)
- MGMT 3210 Supervision and Leadership (3 cr)
- MGMT 3255 Logistics & Supply Chain Mgmt (3 cr)
- MKTG 4100 Retail Management (3 cr)
**Crookston Campus**

**Management Minor**

**Business**

**Academic Affairs**

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 24

A minor in management introduces students to current business theories and practices and provides a basic business knowledge foundation. It also gives students interested in business more marketability in all types of professions, from agriculture and natural sciences to information technology.

Students who earn a management minor will:

1. Demonstrate an understanding of the management roles of planning, leading, organizing, and controlling;
2. Demonstrate analytical and critical-thinking skills with direct application to management;
3. Demonstrate the ability to communicate clearly and concisely in personal and business communication;
4. Demonstrate capability to effectively manage human relations and diversity in professional and business environments;
5. Demonstrate skill in the use of technology and computer applications in business and industry;
6. Demonstrate capability to apply ethical and environmental values to business management principles and practices.

**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)
- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)
- partially online (between 50% to 80% of instruction is online)

**Minor Requirements**

**Management Core**

Take exactly 6 course(s) totaling exactly 18 credit(s) from the following:

- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- FIN 3100 - Managerial Finance (3.0 cr)
- GBUS 3500 - Business Ethics (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- Choose one of the following:
  - ACCT 2101 - Principles of Accounting I (3.0 cr)
  - or ACCT 2010 - Financial Accounting (3.0 cr)

**Management Electives**

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

- MGMT 3215 - Organizational Behavior (3.0 cr)
- MGMT 3220 - Human Resource Management (3.0 cr)
- MGMT 3250 - Operations Management (3.0 cr)
- MGMT 3255 - Logistics and Supply Chain Management (3.0 cr)
- MGMT 4200 - Project Management (3.0 cr)

**Program Sub-plans**

A sub-plan is not required for this program.

**Online**

The management minor online has the same curriculum as the on-campus management minor.

The management minor introduces students to current business theories and practices and provides a basic business knowledge foundation. It also gives students interested in business more marketability in all types of professions, from agriculture and natural sciences to information technology.
sciences to information technology.

Students who earn a management minor will:

1. Demonstrate an understanding of the management roles of planning, leading, organizing, and controlling;
2. Demonstrate analytical and critical-thinking skills with direct application to management;
3. Demonstrate the ability to communicate clearly and concisely in personal and business communication;
4. Demonstrate capability to effectively manage human relations and diversity in professional and business environments;
5. Demonstrate skill in the use of technology and computer applications in business and industry;
6. Demonstrate capability to apply ethical and environmental values to business management principles and practices.
Manufacturing Management B.M.M.

Business

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 47
- Degree: Bachelor of Manufacturing Management

The bachelor of manufacturing management (BMM) is a career-oriented program that prepares students to manage people and machines in a manufacturing environment. Graduates will be able to supervise a manufacturing process, manage human and mechanical resources within budgetary constraints, and assure product quality.

The program is designed to meet the needs of people already in the workplace and two-year graduates who want to continue their education to the bachelor’s degree level with seamless integration of prior credits earned. The program is available for in-class instruction on campus, as well as through online education. The online education components of the program are delivered through asynchronous electronic communication technologies and self-directed learning.

Program outcomes:

- Play a growing role in their workplace, especially in supervision and management.
- Contribute to manufacturing system technology and quality control.
- Establish a quality control department and train staff to meet quality audits.
- Develop grades and standards of quality.
- Set up acceptance sampling and inspection procedures.
- Prepare quality control charts and reports.
- Control the movement of materials in the most efficient manner at the right time, to and from the correct place in the required quantity.
- Do a safety audit through a comprehensive approach to problems of safety in the workplace, including meeting the OSHA standards.

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)
- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)
- partially online (between 50% to 80% of instruction is online)

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. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Manufacturing Management Core

Take 14 or more course(s) totaling 41 or more credit(s) from the following:

- ACCT 3010 - Managerial Accounting (3.0 cr)
- BM 3000 - Manufacturing Processes (3.0 cr)
- BM 3020 - Industrial Safety (3.0 cr)
- BM 3025 - Lean Six Sigma (4.0 cr)
- BM 3034 - Applied Quality (3.0 cr)
• BM 3040 - Industrial Simulation (3.0 cr)
• FIN 3100 - Managerial Finance (3.0 cr)
• GBUS 1005 - Orientation to Online Learning (1.0 cr)
• MGMT 3200 - Principles of Management (3.0 cr)
• MGMT 3215 - Organizational Behavior (3.0 cr)
• MGMT 3250 - Operations Management (3.0 cr)
• MGMT 4200 - Project Management (3.0 cr)
• Choose one of the following:
  • ACCT 2010 - Financial Accounting (3.0 cr)
  or
  • ACCT 2101 - Principles of Accounting I (3.0 cr)
• Choose one of the following:
  • COMM 3008 - Business Writing (3.0 cr)
  or
  • WRIT 3303 - Writing in Your Profession (3.0 cr)

Upper-Division Electives
Students must complete 6 credits of upper-division electives from any department.

Upper-Division Business/Technology
Select a course that is not listed in the Manufacturing Management Core.
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• ACCT 3xxx
• ACCT 4xxx
• BM 3xxx
• BM 4xxx
• ENTR 3xxx
• ENTR 4xxx
• FIN 3xxx
• GBUS 3xxx
• ITM 3xxx
• ITM 4xxx
• MGMT 3xxx
• MGMT 4xxx
• MKTG 3xxx
• MKTG 4xxx
• SE 3xxx
• SE 4xxx

Liberal Education
Take 6 or more course(s) totaling 18 or more credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Open Electives
Students must take enough open elective credits to meet the 120 credit graduation requirement. Approximately 52 credits will be needed.

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

Online
The manufacturing management program is a career-oriented program that prepares students to manage people and machines in a manufacturing environment. Graduates will be able to supervise a manufacturing process, manage human and mechanical resources within budgetary constraints, and assure product quality. The curriculum for the manufacturing management online program is the same as the curriculum for the on-campus program.
Crookston Campus
Manufacturing Management Certificate

Business
Academic Affairs

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 19
- Degree: Manufacturing Mgmt Certificate

The manufacturing management certificate is a workplace centered continuing education program designed to meet the increasing demand for management skills in a production based industrial environment. The program content provides an educational base that enables employees to meet the demands of modern management within a technological work setting.

This flexible program fits the schedules of part-time students and students already in the workplace and is offered for credit or noncredit based on the students' backgrounds. The courses taken for the certificate program will transfer into the bachelor of manufacturing program.

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)
- primarily online (at least 80% of the instruction for the program is online with short, intensive periods of face-to-face coursework)
- partially online (between 50% to 80% of instruction is online)

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. For more information, see the graduation requirements.

Program Requirements

Manufacturing Management Core
Take exactly 5 course(s) totaling exactly 16 credit(s) from the following:
- BM 3000 - Manufacturing Processes (3.0 cr)
- BM 3025 - Lean Six Sigma (4.0 cr)
- BM 3034 - Applied Quality (3.0 cr)
- MGMT 3250 - Operations Management (3.0 cr)
- MGMT 3255 - Logistics and Supply Chain Management (3.0 cr)

Manufacturing Management Electives
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
- ACCT 2010 - Financial Accounting (3.0 cr)
- ACCT 3010 - Managerial Accounting (3.0 cr)
- BM 3005 - Facilities Planning and Selection (3.0 cr)
- BM 3008 - Sustainability and Compliance (3.0 cr)
- BM 3020 - Industrial Safety (3.0 cr)
- FIN 3100 - Managerial Finance (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- MGMT 3215 - Organizational Behavior (3.0 cr)
- MGMT 4200 - Project Management (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
Marketing B.S.
Business
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 62 to 63
- This program requires summer terms.
- Degree: Bachelor of Science

The importance of marketing for organizations today cannot be underestimated. The best product in the world can fail if it is not marketed appropriately. Marketing is a very broad degree program covering such diverse topics as personal selling, integrated marketing communication, advertising, sales promotion, the psychology of consumer behavior, marketing research, retail marketing, marketing ethics, logistics, internet marketing, and strategic marketing. Organizations need individuals who can identify consumer needs and configure appropriate solutions, and a marketing degree provides graduates with these skills.

A degree in marketing prepares graduates for a variety of careers in marketing, including brand management, sales management, personal selling, account executives, advertising, marketing research, and retailing.

Program outcomes:

- Demonstrate analytical and critical-thinking skills with direct application to business environments
- Demonstrate the ability to communicate clearly and concisely in personal and business communication
- Demonstrate an ability to effectively apply human relations and team dynamic concepts in professional and business environments
- Demonstrate the ability to value diversity and apply global multidisciplinary concepts in business and industry
- Demonstrate skill in the use of technology and computer software applications in business and industry
- Demonstrate capability to apply ethical and environmental values to general business principles and practices
- Understand the importance of having a consumer orientation and demonstrate how to effectively establish, develop, and maintain business relationship
- Demonstrate working knowledge of technological and global developments that are changing the scope of the marketing discipline

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
A minimum of 40 upper-division credits are required to graduate.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Marketing Core
Take 20 courses totaling 56-57 credits from the following:
- ACCT 2101 - Principles of Accounting I (3.0 cr)
- ACCT 2102 - Principles of Accounting II (3.0 cr)
- COMM 3008 - Business Writing (3.0 cr)
- GBUS 3100 - Career & Professional Development (1.0 cr)
- FIN 3100 - Managerial Finance (3.0 cr)
**GBUS 3107 - Legal Environment in Business (3.0 cr)**

**GBUS 3500 - Business Ethics (3.0 cr)**

**IBUS 3360 - International Marketing (3.0 cr)**

**ITM 3020 - Introduction to Management Information Systems (3.0 cr)**

**MGMT 3200 - Principles of Management (3.0 cr)**

**MKTG 2200 - Personal Selling (3.0 cr)**

**MKTG 3230 - Digital Marketing (3.0 cr)**

**MKTG 3250 - Integrated Marketing Communication (3.0 cr)**

**MKTG 3300 - Principles of Marketing (3.0 cr)**

**MKTG 3310 - Consumer Behavior (3.0 cr)**

**MKTG 3300 - Principles of Marketing (3.0 cr)**

**MKTG 3400 - Marketing Research (3.0 cr)**

**MKTG 3700 - Brand Management (3.0 cr)**

**MKTG 4800 - Marketing Strategies (3.0 cr)**

Students not required to take UMC 1200 take the following:

- **GBUS 1005 - Orientation to Online Learning (1.0 cr)**
- or **UMC 1200 - Introduction to University Life [CR THINKG] (2.0 cr)**

**Internship**

Choose 3 credits from the following:

- **MKTG 3900 - Internship (3 cr)**

**Electives**

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

- **CA 1040 - Web Site Development (3.0 cr)**
- **COMM 4000 - News and Social Media Communication (3.0 cr)**
- **GBUS 3300 - Business Analytics (3.0 cr)**
- **MGMT 3600 - Change, Creativity, and Innovation Management (3.0 cr)**
- **MKTG 4100 - Retail Management (3.0 cr)**
- **SRM 3006 - Sport Marketing and Communication (3.0 cr)**

**Liberal Education**

This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.

Take 8 or more course(s) totaling 24 or more credit(s) from the following:

- **COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)**
- **COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)**
- **ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)**
- **MATH 1031 - College Algebra [MATH THINK] (3.0 cr)**
- **MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)**
- **PSY 1001 - General Psychology [HI/BEH/SSC] (3.0 cr)**

**Technology**

Take 1 course totaling 3 or more credits:

- **CA 1020 - Spreadsheet Applications (3.0 cr)**

**Open Electives**

Students must take enough electives credits to meet the 120 credit requirement for graduation. Exact number will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

**Program Sub-plans**

A sub-plan is not required for this program.

**Online**

The curriculum for the marketing BS online is identical to the on-campus marketing BS program with the following exceptions:

Online students have the option to take either MGMT 3900 Internship (3 cr) or an additional 3 credits from the list of program electives as follows:

**Electives**

Take 3 courses (instead of 2 courses) for a minimum of 9 credits from the following:

- **CA 040 Web Site Development (3 cr)**
- **COMM 4000 News and Social Media Communication (3 cr)**

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Information current as of August 09, 2021
GBUS 3300 Business Analytics (3 cr)
MGMT 3600 Change, Creativity and Innovation Management (3 cr)
MKTG 4100 Retail Management (3 cr)
SRM 3006 Sport Marketing and Communication (3 cr)
Crookston Campus
Marketing Minor
Business
Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 19

A minor in marketing complements a wide array of majors. The marketing minor introduces students to current marketing theories and practices. Students pursuing a minor in marketing will learn the basics of marketing principles, effective personal selling, the psychology of consumer behavior, and marketing research methods.

Several electives are offered to provide five areas of specialization for students seeking the marketing minor.

Program outcomes for students:

- understand the importance of having a consumer orientation and demonstrate how to effectively establish, develop, and maintain business relationships
- demonstrate working knowledge of technological and global developments that are changing the scope of the marketing discipline

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)

Minor Requirements
Marketing Core
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- MKTG 3300 - Principles of Marketing (3.0 cr)
- MKTG 3310 - Consumer Behavior (3.0 cr)
- MKTG 3400 - Marketing Research (3.0 cr)

Marketing Electives
Take 9 or more credit(s) from the following:
- ENTR 3150 - Entrepreneurial Marketing (3.0 cr)
- IBUS 3360 - International Marketing (3.0 cr)
- MKTG 2200 - Personal Selling (3.0 cr)
- MKTG 3230 - Digital Marketing (3.0 cr)
- MKTG 3250 - Integrated Marketing Communication (3.0 cr)
- MKTG 3700 - Brand Management (3.0 cr)
- MKTG 4100 - Retail Management (3.0 cr)
- SRM 3006 - Sport Marketing and Communication (3.0 cr)

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

Online
A minor in marketing complements a wide array of majors. The marketing minor introduces students to current marketing theories and practices. Students pursuing a minor in marketing will learn the basics of marketing principles, effective personal selling, the psychology of consumer behavior, and marketing research methods. The marketing minor (online) has the same curriculum as the classroom delivered marketing minor with the exception that a one-credit technology requirement is also required.

Orientation to Online Learning
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus
Medical Laboratory Science B.S.
Math, Science and Technology
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 126
- Required credits within the major: 99
- This program requires summer terms.
- University of North Dakota in Grand Forks, ND. The spring and summer semesters of students’ junior year and their final year of the program will be taught through an agreement with the University of North Dakota School of Medicine. The final year is in a clinical setting.
- Degree: Bachelor of Science

The BS in medical laboratory science will give students a degree that will provide life-long mobility, flexibility and opportunity. Individuals who enjoy science, solving problems, and working as part of a team may find medical laboratory science to be a rewarding career. A medical lab scientist is part of a healthcare team that performs a variety of fact-finding tests that are used by physicians in making 70 to 80 percent of medical decisions. In addition, this degree provides a great background for individuals interested in entering fields of forensic science or medicine (medical doctors, dentists, pharmacists, etc.).

Modern medicine would be impossible without the problem solving skills of medical lab scientists. MLS scientists run tests that encompass areas of clinical chemistry, clinical microbiology, hematology, clinical urology, immunology, immunohematology, and molecular diagnostics. Each test run will find an additional clue in the final patient diagnosis, which will assist the physicians in determining the best treatment for the patients. Due to the national shortage of medical lab scientists, MLS graduates will have excellent opportunities in nearly all areas of the United States.

Program outcomes for graduates:

- Demonstrate competencies in the following areas: collection, safe handling and analysis of biological specimens; principles of continuous assessment of data collection and analysis; compliance with laboratory safety regulations; and ethical behavior and professionalism.
- Demonstrate oral and written communications skills.
- Effectively work with others in groups and be able to take on leadership roles when appropriate.
- Demonstrate a disposition for an entry-level, professional position in the medical laboratory sciences for the 21st century.
- Learn to think critically to solve problems.
- Evaluate published scientific studies through a context of research design.
- Demonstrate an understanding of the significance of cultural sensitivity and awareness as it applies to the profession.

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

Admission Requirements
Admission to year four of the program requires a minimum GPA of 2.8, no more than one "D" in any math or science course, and recommendation by the student's academic advisor.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for courses required under math, biology, chemistry, ethics and writing, MLS and technology...
requirements. This includes grades earned at UMC or transferred in from another institution.

Math
Take exactly 2 course(s) totaling 6 - 8 credit(s) from the following:
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• MATH 1250 - Precalculus [MATH THINK] (4.0 cr)
• MATH 1271 - Calculus I [MATH THINK] (4.0 cr)

Biology
Take exactly 5 course(s) totaling exactly 20 credit(s) from the following:
• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
or BIOL 1009H - Honors: General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• BIOL 2012 - General Zoology (4.0 cr)
• BIOL 2032 - General Microbiology (4.0 cr)
• BIOL 2103 - Human Anatomy and Physiology I (4.0 cr)
• BIOL 2104 - Human Anatomy and Physiology II (4.0 cr)

Chemistry
Take exactly 7 course(s) totaling exactly 16 credit(s) from the following:
• CHEM 1061 - Chemical Principles I [PHYS SCI, PEOPLE/ENV] (3.0 cr)
• CHEM 1062 - Chemical Principles II (3.0 cr)
• CHEM 1065 - Chemical Principles I Laboratory [PHYS SCI, PEOPLE/ENV] (1.0 cr)
• CHEM 1066 - Chemical Principles II Laboratory (1.0 cr)
• CHEM 2301 - Organic Chemistry I (3.0 cr)
• CHEM 2310 - Organic Chemistry Laboratory I (2.0 cr)
• BIOL 3027 - Cell Biology (3.0 cr)
or CHEM 3021 - Biochemistry (3.0 cr)

Ethics and Writing
Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
• PHIL 2002 - Introduction to Ethics [HUMANITIES, ETH/CIV RE] (3.0 cr)
• WRIT 3303 - Writing in Your Profession (3.0 cr)

Medical Laboratory Science
Take exactly 29 course(s) totaling exactly 51 credit(s) from the following:
• MLS 2234 - Human Parasitology (UND) (2.0 cr)
• MLS 3301 - Immunology (UND) (3.0 cr)
• MLS 3325 - Hematology (UND) (3.0 cr)
• MLS 3326 - Hematology Laboratory (UND) (1.0 cr)
• MLS 3336 - Laboratory Calculations (UND) (1.0 cr)
• MLS 3340 - Molecular Diagnostics (UND) (2.0 cr)
• MLS 3394 - Medical Microbiology (UND) (2.0 cr)
• MLS 4471 - Clinical Chemistry I (UND) (2.0 cr)
• MLS 4472 - Pre-Analytical Testing Skills (UND) (1.0 cr)
• MLS 4473 - Clinical Hemostasis I (UND) (2.0 cr)
• MLS 4474 - Clinical Urinalysis I (UND) (2.0 cr)
• MLS 4476 - Clinical Immunohematology I (UND) (1.0 cr)
• MLS 4477 - Clinical Immunohematology I Laboratory (UND) (1.0 cr)
• MLS 4478 - Clinical Microbiology I (UND) (2.0 cr)
• MLS 4479 - Clinical Hematology I (UND) (2.0 cr)
• MLS 4480 - Clinical Immunohematology II (UND) (2.0 cr)
• MLS 4481 - Clinical Chemistry II (UND) (2.0 cr)
• MLS 4483 - Clinical Hemostasis II (UND) (1.0 cr)
• MLS 4484 - Clinical Microbiology II (UND) (2.0 cr)
• MLS 4485 - Clinical Urinalysis II (UND) (1.0 cr)
• MLS 4487 - Medical Mycology (UND) (1.0 cr)
• MLS 4488 - Clinical Hematology II (UND) (2.0 cr)
• MLS 4489 - Clinical Body Fluids (UND) (1.0 cr)
• MLS 4490 - Financial and Quality Management of the Clinical Laboratory (UND) (3.0 cr)
• MLS 4491 - Clinical Chemistry III (UND) (2.0 cr)
• MLS 4492 - Clinical Immunohematology III (UND) (2.0 cr)
• MLS 4494 - Clinical Immunology (UND) (1.0 cr)
• MLS 4495 - Clinical Microbiology III (UND) (2.0 cr)
• MLS 4498 - Clinical Hematology III (UND) (2.0 cr)
Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
If applicable, the course chosen to fulfill the technology requirement may also satisfy a major requirement.
Take exactly 1 course(s) totaling 3 or more credit(s) from the following:
• CA 1xxx
  or CA 2xxx
  or CHEM 3022 - Chemical Analysis in the Biological and Environmental Sciences (4.0 cr)
  or MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
Crookston Campus

Music Minor
Humanities, Social Sciences, and Education

Academic Affairs

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18

The music minor allows students to develop a concentrated course of studies in music while pursuing a major in another area. Students who plan to earn a baccalaureate degree at UMC are generally able to complete the music minor if they have an appropriate musical background and/or interest. Students completing the minor may pursue opportunities in teaching beginning to intermediate piano lessons, playing church organ, directing volunteer choirs, directing community musicals, etc. The minor complements all UMC major degree programs.

Program outcomes:
1. vocal or instrumental skills for performance;
2. enhanced appreciation of the performing arts;
3. skills for part-time employment in music field.

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

Minor Requirements

Music Core
Take exactly 3 course(s) totaling exactly 7 credit(s) from the following:
• MUS 1021 - Introduction to Music [HUMANITIES, HUMAN DIV] (3.0 cr)
• MUS 1111 - Elementary Music Theory [HUMANITIES] (3.0 cr)
• Choose one of the following:
  • MUS 1042 - Private Instruction: Class Piano [HUMANITIES] (1.0 cr)
  or MUS 3042 - Class Piano: Intermediate/Advanced (1.0 cr)

Lower-Division Electives
Take 5 or more credit(s) from the following:
• MUS 1011 - University Singers [HUMANITIES] (1.0 cr)
• MUS 1041 - Private Music Instruction [HUMANITIES] (1.0 cr)
• MUS 1042 - Private Instruction: Class Piano [HUMANITIES] (1.0 cr)
• MUS 1051 - Student-Community Band [HUMANITIES] (1.0 cr)
• MUS 1071 - Musical Theater [HUMANITIES] (1.0 cr)

Upper-Division Electives
Take 6 or more credit(s) from the following:
• MUS 3011 - University Singers (Choir) [HUMANITIES] (1.0 cr)
• MUS 3027 - Rock and Jazz Music Styles [HUMANITIES, HUMAN DIV] (3.0 cr)
• MUS 3041 - Private Instruction [HUMANITIES] (1.0 cr)
• MUS 3051 - Student-Community Band [HUMANITIES] (1.0 cr)
• MUS 3091 - Instrumental and Choral Conducting (2.0 cr)
Crookston Campus
Natural Resources B.S.
Agriculture and Natural Resources
Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 65 to 75
- This program requires summer terms.
- Degree: Bachelor of Science

Managing natural resources is increasingly important, with increasing human populations and limited natural resources and habitats. Natural resource managers help balance the needs of people with the ability of ecosystems to sustainably support soil, water, forests, wildlife, fish, and recreational resources.

UMC's bachelor of science in natural resources provides an integrated approach to soil and water conservation, wildlife and fisheries management, forestry, and recreation. This combination enables graduates to work with a variety of resources and people and to build a career tailored to their interests. Students select one of the following emphases:

- Ecological restoration
- Natural resources aviation
- Natural resources law enforcement
- Natural resources management
- Park management
- Water resource management
- Wildlife management

Program outcomes:
- Apply an integrated approach to resource management that incorporates environmental, economic, and social considerations
- Demonstrate appropriate technical knowledge and practical applications necessary for employment in the natural resources field
- Perform group problem solving, decision-making, and conflict management to be effective in resource management
- Demonstrate oral and written communication skills appropriate for a beginning natural resource professional
- Be aware of the necessity of continuing education and professional development to be successful in a changing natural resources workplace

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. For more information, see the graduation requirements.

Program Requirements
Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program, subplan/emphasis, and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Natural Resources Core
Take exactly 10 course(s) totaling 24 or more credit(s) from the following:
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- NATR 1233 - Introduction to Natural Resources (3.0 cr)
- NATR 1244 - Elements of Forestry (4.0 cr)
• NATR 2630 - Introduction to Geographic Information Systems (3.0 cr)
• NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
• NATR 4652 - Seminar (1.0 cr)
• WRIT 3303 - Writing in Your Profession (3.0 cr)

Pre-Internship Seminar
NATR 2899 - Pre-Internship Seminar (0.5 cr)
or NATR 3899 - Pre-Internship Seminar (0.5 cr)

Internship
Take 2 or more credit(s) from the following:
• NATR 3900 - Internship (0.5 - 4.0 cr)

Post-Internship Seminar
NATR 3901 - Post-Internship Seminar (0.5 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses. Take exactly 6 course(s) totaling exactly 21 credit(s) from the following:

• BIOL 1009 - General Biology [BIOL SCI, PEOPLE/ENV] (4.0 cr)
• CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Technology
If applicable, the course taken from below may be used to satisfy both the program and technology requirements. Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:

• CA 1020 - Spreadsheet Applications (3.0 cr)
• NATR 3635 - Geographic Information Systems Applications (3.0 cr)

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

Ecological Restoration
Ecological restoration is the processes of repairing ecosystems that have been damaged due to human or natural influences. Courses in this emphasis provide an interdisciplinary background that encompasses restoration and management of terrestrial and wetland ecosystems, invasive species management, conservation biology, ecology, and remediation of severely disturbed lands. The emphasis prepares students for a career as restoration practitioners and land managers with non-profit, private, or governmental agencies and for graduate school in natural resource management.

Program outcomes:
Assess causes of land degradation and plan restoration actions that promote ecosystem health
Understand the interactions between management practices and social factors that lead to successful project implementation

The Natural Resources BS with an emphasis in Ecological Restoration requires a minimum of 69 credits within the major.

Ecological Restoration Core
Take 13 or more course(s) totaling 41 or more credit(s) from the following:

• ASM 3009 - Surveying (4.0 cr)
• ENSC 3124 - Environmental Science and Remediation Techniques (3.0 cr)
• NATR 3364 - Plant Taxonomy (3.0 cr)
• NATR 3376 - Wetland and Riparian Ecology and Management (3.0 cr)
• NATR 3480 - Ecological Restoration (3.0 cr)
• NATR 3488 - Invasive Species Ecology and Management (3.0 cr)
• NATR 4654 - Wildlife Ecology and Management (4.0 cr)
• NATR 3660 - Prairie Ecosystem Management (2.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• SWM 3224 - Soil and Water Conservation (4.0 cr)
• SWM 3225 - Watershed Management (3.0 cr)
• Choose one of the following:
  • BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)
• Choose one of the following:
• NATR 3344 - Land Use Planning (3.0 cr)
  or NATR 4699 - Integrated Resource Management (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Natural Resources Law Enforcement
This emphasis provides integrated instruction in natural resources management and law enforcement. General classes in natural resources, wildlife and fisheries management, forestry recreation, and land use planning are combined with criminal justice/law enforcement classes. After completing coursework and training in first aid and traffic law, students may attend a skills session and take the Minnesota Peace Officer Standards and Training (POST) certification examination.

Program outcomes:
Understand the role of education and law enforcement in natural resource management
Be qualified to attend the peace officer's skills training academy

The Natural Resources BS with an emphasis in Natural Resources Law Enforcement requires a minimum of 78 credits within the major.

Natural Resources Law Enforcement Core
Take exactly 17 courses totaling 54-55 credit(s) from the following:
• CRJS 1500 - Introduction to Criminal Justice [HI/BEH/SSC, ETH/CIV RE] (4.0 cr)
• CRJS 2500 - Introduction to Policing (3.0 cr)
• CRJS 2550 - Traffic Law (2.0 cr)
• CRJS 2560 - Emergency Medical Responder (3.0 cr)
• CRJS 3505 - Judicial Process (3.0 cr)
• CRJS 3525 - Juvenile Justice and Delinquency (3.0 cr)
• CRJS 3530 - Criminal Justice Diversity (3.0 cr)
• CRJS 3550 - Criminal Investigation (3.0 cr)
• CRJS 3575 - Critical Issues in Policing (3.0 cr)
• CRJS 4510 - Victimology (3.0 cr)
• CRJS 4540 - Criminal Law (4.0 cr)
• CRJS 4550 - Criminal Procedure (4.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 4654 - Wildlife Ecology and Management (4.0 cr)

Choose one of the following:
• BIOL 1030 - College Algebra [MATH THINK] (3.0 cr)
• BIOL 1150 - Intro to Statistics [MATH THINK] (3.0 cr)

Liberal Education
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Natural Resources Law Enforcement
This emphasis provides integrated instruction in natural resources management and law enforcement. General classes in natural resources, wildlife and fisheries management, forestry recreation, and land use planning are combined with criminal justice/law enforcement classes. After completing coursework and training in first aid and traffic law, students may attend a skills session and take the Minnesota Peace Officer Standards and Training (POST) certification examination.

Program outcomes:
Understand the role of education and law enforcement in natural resource management
Be qualified to attend the peace officer's skills training academy

The Natural Resources BS with an emphasis in Natural Resources Law Enforcement requires a minimum of 78 credits within the major.

Natural Resources Law Enforcement Core
Take exactly 17 courses totaling 54-55 credit(s) from the following:
• CRJS 1500 - Introduction to Criminal Justice [HI/BEH/SSC, ETH/CIV RE] (4.0 cr)
• CRJS 2500 - Introduction to Policing (3.0 cr)
• CRJS 2550 - Traffic Law (2.0 cr)
• CRJS 2560 - Emergency Medical Responder (3.0 cr)
• CRJS 3505 - Judicial Process (3.0 cr)
• CRJS 3525 - Juvenile Justice and Delinquency (3.0 cr)
• CRJS 3530 - Criminal Justice Diversity (3.0 cr)
• CRJS 3550 - Criminal Investigation (3.0 cr)
• CRJS 3575 - Critical Issues in Policing (3.0 cr)
• CRJS 4510 - Victimology (3.0 cr)
• CRJS 4540 - Criminal Law (4.0 cr)
• CRJS 4550 - Criminal Procedure (4.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 4654 - Wildlife Ecology and Management (4.0 cr)

Choose one of the following:
• BIOL 1030 - College Algebra [MATH THINK] (3.0 cr)
• BIOL 1150 - Intro to Statistics [MATH THINK] (3.0 cr)

Liberal Education
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Natural Resources Law Enforcement
This emphasis provides integrated instruction in natural resources management and law enforcement. General classes in natural resources, wildlife and fisheries management, forestry recreation, and land use planning are combined with criminal justice/law enforcement classes. After completing coursework and training in first aid and traffic law, students may attend a skills session and take the Minnesota Peace Officer Standards and Training (POST) certification examination.

Program outcomes:
Understand the role of education and law enforcement in natural resource management
Be qualified to attend the peace officer's skills training academy

The Natural Resources BS with an emphasis in Natural Resources Law Enforcement requires a minimum of 78 credits within the major.

Natural Resources Law Enforcement Core
Take exactly 17 courses totaling 54-55 credit(s) from the following:
• CRJS 1500 - Introduction to Criminal Justice [HI/BEH/SSC, ETH/CIV RE] (4.0 cr)
• CRJS 2500 - Introduction to Policing (3.0 cr)
• CRJS 2550 - Traffic Law (2.0 cr)
• CRJS 2560 - Emergency Medical Responder (3.0 cr)
• CRJS 3505 - Judicial Process (3.0 cr)
• CRJS 3525 - Juvenile Justice and Delinquency (3.0 cr)
• CRJS 3530 - Criminal Justice Diversity (3.0 cr)
• CRJS 3550 - Criminal Investigation (3.0 cr)
• CRJS 3575 - Critical Issues in Policing (3.0 cr)
• CRJS 4510 - Victimology (3.0 cr)
• CRJS 4540 - Criminal Law (4.0 cr)
• CRJS 4550 - Criminal Procedure (4.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 4654 - Wildlife Ecology and Management (4.0 cr)

Choose one of the following:
• BIOL 1030 - College Algebra [MATH THINK] (3.0 cr)
• BIOL 1150 - Intro to Statistics [MATH THINK] (3.0 cr)

Liberal Education
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Natural Resources Law Enforcement
This emphasis provides integrated instruction in natural resources management and law enforcement. General classes in natural resources, wildlife and fisheries management, forestry recreation, and land use planning are combined with criminal justice/law enforcement classes. After completing coursework and training in first aid and traffic law, students may attend a skills session and take the Minnesota Peace Officer Standards and Training (POST) certification examination.

Program outcomes:
Understand the role of education and law enforcement in natural resource management
Be qualified to attend the peace officer's skills training academy

The Natural Resources BS with an emphasis in Natural Resources Law Enforcement requires a minimum of 78 credits within the major.

Natural Resources Management
This major provides an integrated approach to land use and the conservation of wildlife, fish, forest, and recreation resources. This major is especially appropriate for students seeking a broad understanding of resource management principles and environmental issues. A combination of coursework in natural resources, agriculture, and liberal education prepares students for land management positions in which a balance between environmental, economic, and social concerns is sought.

Program outcome:
Understand ecological management principles that apply to wildlife, fish, forest, soil, water, and recreation resources

The Natural Resources BS with an emphasis in Natural Resources Management requires a minimum of 59 credits within the major.

Natural Resources Management Core
Take 12 or more course(s) totaling 38 or more credit(s) from the following:
• ASM 3009 - Surveying (4.0 cr)
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 3344 - Land Use Planning (3.0 cr)
• NATR 3364 - Plant Taxonomy (3.0 cr)
• NATR 3376 - Wetland and Riparian Ecology and Management (3.0 cr)
• NATR 4654 - Wildlife Ecology and Management (4.0 cr)
• NATR 3660 - Prairie Ecosystem Management (2.0 cr)
• NATR 4699 - Integrated Resource Management (3.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• SWM 3224 - Soil and Water Conservation (4.0 cr)

Choose one of the following:
• BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

Choose one of the following:
• SWM 3009 - Hydrology and Water Quality (4.0 cr)
  or SWM 3225 - Watershed Management (3.0 cr)

Electives
Take 6 or more credit(s) from the following:
• AGRO 1183 - Field Crops: Production Principles (3.0 cr)
• NATR 3480 - Ecological Restoration (3.0 cr)
• NATR 3488 - Invasive Species Ecology and Management (3.0 cr)

Liberal Education
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Park Management
This emphasis provides an integrated approach to park and recreation area management. A combination of natural resources, horticulture, and management courses prepare students for park and resource management positions, typically with federal/state/county/city recreation agencies. Flexibility in the choice of major electives allows students to build a customized program that meets their specific career goals.

Program outcome:
Understand the interrelatedness of and techniques used to manage both visitor use and recreational resources

The Natural Resources BS with an emphasis in Park Management requires a minimum of 67 credits within the major.

Park Management Core
Take exactly 6 course(s) totaling exactly 18 credit(s) from the following:
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 3344 - Land Use Planning (3.0 cr)
• NATR 3364 - Plant Taxonomy (3.0 cr)
• NATR 4699 - Integrated Resource Management (3.0 cr)
• SOIL 1293 - Soil Science (3.0 cr)
• Choose one of the following:
  • BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

Agriculture/Natural Resources Electives
Take 15 or more credit(s) from the following:
• AGEC
• AGRO
• ANSC
• ASM
• EQSC
• GNAG
• PUBH
• SOIL
• AVIA
• CRJS
• HORT
• NATR
• SWM

Horticulture Electives
Take 7 or more credit(s) from the following:
HORT

Recommended Electives
Take 0 or more credit(s) from the following:
- HORT 1021 - Woody Plant Materials (4.0 cr)
- HORT 3040 - Landscape Installation and Maintenance (3.0 cr)

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

Recommended Electives
Take 0 or more credit(s) from the following:
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3220 - Human Resource Management (3.0 cr)

Liberal Education
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
- MATH 3100 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Water Resource Management
Courses in natural resources along with agriculture, geology, soils, fisheries management, water quality, and land use planning provide a background focused on water resources. Watersheds are studied by land cover and mapping technologies in relationship to field monitoring of lakes and streams.

Program outcomes:
Understand methods of assessing land management practices at the watershed scale and how they affect water quality
Measure and use appropriate water quality parameters to assess the health of land and aquatic systems
Recommend appropriate land/water management practices to achieve soil conservation and water quality goals

The Natural Resources BS with an emphasis in Water Resource Management requires a minimum of 69 credits within the major.

Water Resource Management Core
Take 14 or more course(s) totaling 46 or more credit(s) from the following:
- AGRO 1183 - Field Crops: Production Principles (3.0 cr)
- ASM 3009 - Surveying (4.0 cr)
- BIOL 3722 - Limnology (3.0 cr)
- GEOL 1001 - Introductory Geology [PHYS SCI, PEOPLE/ENV] (4.0 cr)
- NATR 1663 - Principles of Fisheries Management (3.0 cr)
- NATR 3344 - Land Use Planning (3.0 cr)
- NATR 3364 - Plant Taxonomy (3.0 cr)
- NATR 3376 - Wetland and Riparian Ecology and Management (3.0 cr)
- NATR 4699 - Integrated Resource Management (3.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)
- SWM 3009 - Hydrology and Water Quality (4.0 cr)
- SWM 3224 - Soil and Water Conservation (4.0 cr)
- SWM 3225 - Watershed Management (3.0 cr)
- Choose one of the following:
  - BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
  - BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

Liberal Education
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.

Wildlife Management
This emphasis concentrates on wildlife and habitats. The major focuses on land and wetland habitats and their animal associates with some emphasis on fisheries management. Graduates fulfill the educational requirements for certification as an Associate Wildlife Biologist by The Wildlife Society. Professional relationships and student development are enhanced by a student chapter of The Wildlife Society.

Program outcomes:
Understand the interrelatedness and techniques used to manage vertebrate populations and their habitat.

Understand the dynamics of wildlife populations, habitats, and appropriate monitoring techniques.

The Natural Resources BS with an emphasis in Wildlife Management requires a minimum of 73 credits within the major.

A minimum GPA of 3.00 is required for graduation.

**Wildlife Management Core**

Take 14 or more course(s) totaling 44 or more credit(s) from the following:
- AGRO 3030 - Research Techniques in Agriculture and Natural Resources (3.0 cr)
- ANSC 3203 - Animal Anatomy and Physiology (4.0 cr)
- BIOL 2012 - General Zoology (4.0 cr)
- NATR 3344 - Land Use Planning (3.0 cr)
- NATR 3364 - Plant Taxonomy (3.0 cr)
- NATR 3376 - Wetland and Riparian Ecology and Management (3.0 cr)
- NATR 3464 - Mammalogy (3.0 cr)
- NATR 3466 - Ornithology (3.0 cr)
- NATR 3468 - Wildlife Habitat Management Techniques (3.0 cr)
- NATR 3660 - Prairie Ecosystem Management (2.0 cr)
- NATR 4654 - Wildlife Ecology and Management (4.0 cr)
- NATR 4699 - Integrated Resource Management (3.0 cr)
- SOIL 1293 - Soil Science (3.0 cr)

Choose one of the following:
- BIOL 2021 - Plant Diversity, Ecology, and Evolution [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- or BIOL 2022 - General Botany [BIOL SCI, PEOPLE/ENV] (3.0 cr)

**Electives**

Take 1 or more course(s) totaling 3 or more credit(s) from the following:
- ASM 1034 - Facility Maintenance and Safety (4.0 cr)
- ASM 3009 - Surveying (4.0 cr)
- NATR 3480 - Ecological Restoration (3.0 cr)

**Liberal Education**

Take exactly 2 course(s) totaling exactly 6 credit(s) from the following:
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)

**Open Electives**

Students must take enough electives to satisfy the 120 credit graduation requirement. Number needed will depend on how the student selects their liberal education courses to satisfy the Minnesota Transfer Curriculum.
Crookston Campus
Nursing Home Administrator Certificate
Business
Academic Affairs

• Program Type: Undergraduate credit certificate
• Requirements for this program are current for Fall 2021
• Required credits to graduate with this degree: 32 to 34

The Nursing Home Administrator (NHA) online Certificate program prepares individuals for the regulatory and business principles of nursing homes, assisted living facilities, home health services, and other long-term care services. The certificate content consists of courses required for the state of Minnesota licensure and preparation for the National Association of Nursing Home Administrator Board (NAB) exam to become a Licensed Nursing Home Administrator (LNHA). The certificate courses reside within the Health Management program, accredited by the Minnesota Board of Examiners of Nursing Home Administrators (BENHA). Every state requires nursing home administrators to be licensed. Minnesota and most other states require candidates to have at least a Bachelor's degree, prior to or during the completion of the required certificate courses. Once licensed, individuals are qualified to lead organizations in the field of long-term care (LTC) services.

During the online coursework, students will also be required to successfully complete an internship, or practicum, for experiential learning and aspects of regulatory and leadership education not always or consistently included in the courses. The internship will occur in the areas of a skilled nursing home (primarily), assisted living, and other LTC services and supports. The site will be approved by faculty prior to commencing the internship.

Application to the certificate program is required along with completion of a Bachelors degree from an accredited institution of higher learning as demonstrated by a transcript or in tandem with the completion of a degree from the University of Minnesota schools with a minimum 2.8 GPA. Candidates with coursework completed within a maximum of a four-year/twelve semester timeframe. A Bachelor or Masters degree obtained greater than seven years requires evidence of continued competency such as work experience or continuing education.

Program Delivery
This program is available:
• completely online (all program coursework can be completed online)

Admission Requirements
Application to the Nursing Home Administrator certificate program is required along with completion of a Bachelors degree from an accredited institution of higher learning as demonstrated by a transcript or in tandem with the completion of a degree from the University of Minnesota schools with a minimum 2.8 GPA. Candidates with coursework completed within a maximum of a four-year/twelve semester timeframe. A Bachelor or Masters degree obtained greater than seven years requires evidence of continued competency such as work experience or continuing education.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Nursing Home Administrator Certificate
Take 10 or more course(s) totaling 29 or more credit(s) from the following:
• ACCT 2102 - Principles of Accounting II (3.0 cr)
• HSM 3030 - Health Care and Medical Needs (3.0 cr)
• HSM 3200 - Health Care Leadership and Planning (4.0 cr)
• HSM 3230 - Administration of the Long Term Care System (3.0 cr)
• HSM 3250 - Performance Improvement in Health Care (3.0 cr)
• HSM 4210 - Health Care Law and Biomedical Ethics (4.0 cr)
• HSM 4212 - Regulatory Management (3.0 cr)
• MGMT 3220 - Human Resource Management (3.0 cr)
SOC 3937 - Social Gerontology: Elders in American Society (3.0 cr)

Internship

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

HSM 3900 - Internship (1.0 - 5.0 cr)

Program Sub-plans

A sub-plan is not required for this program.
Crookston Campus
Programming Minor
Math, Science and Technology
Academic Affairs

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 24

A programming minor is intended for students in any field. Students completing the programming minor will demonstrate abilities in the use of programming languages including database and web development. The minor consists of programming courses that support understanding of software development skills. The minor will provide opportunities for problem-solving, structured and creative thinking, and hands-on experience with a broad range of software languages.

Program outcomes:
Work as an individual or as part of a team to develop and deliver software artifacts.
Design appropriate solutions in one or more application domains using software engineering approaches that integrate ethical, social, legal, and economic concerns.
Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for problem identification and analysis, software design, development, implementation, verification, and documentation. The minor consists of courses designed to provide students in any field with a technical background that includes hands-on experiences, giving them a competitive edge.

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)

Minor Requirements

**Programming Core**
Take 6 or more course(s) totaling 18 or more credit(s) from the following:
- CA 1040 - Web Site Development (3.0 cr)
- SE 2050 - Introduction to Programming I (3.0 cr)
- SE 2090 - Data Structures and Algorithms (3.0 cr)
- SE 3050 - Database Management Systems (3.0 cr)
- SE 4050 - Advanced Web Application Development (3.0 cr)
- SE 2070 or SE 3100 can not satisfy both the core and elective requirements at the same time.
  - SE 2070 - Introduction to Programming II (3.0 cr)
  - SE 3100 - Object-Oriented Programming (3.0 cr)

**Program Electives**
Take 2 or more course(s) totaling 6 or more credit(s) from the following:
- AGRO 3030 - Statistical Analyses and Research Techniques in Agriculture and Natural Resources (3.0 cr)
- SE 2200 - Introduction to Software Engineering (3.0 cr)
- SE 2300 - Software Construction (3.0 cr)
- SE 2400 - Software Engineering Approach to Human Computer Interaction (3.0 cr)
- SE 3250 - Cybercrime and Digital Forensics (3.0 cr)
- SE 2070 or SE 3100 can not satisfy both the core and elective requirements at the same time.
  - SE 2070 - Introduction to Programming II (3.0 cr)
  - SE 3100 - Object-Oriented Programming (3.0 cr)

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

Online
The online Programming Minor has the same curriculum as the on-campus program.
Quality Management B.M.M.

Program Type: Baccalaureate

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Quality Management Core
Take 14 or more course(s) totaling 41 or more credit(s) from the following:

- ACCT 3010 - Managerial Accounting (3.0 cr)
- BM 3000 - Manufacturing Processes (3.0 cr)
- BM 3007 - Metrology (3.0 cr)
- BM 3008 - Sustainability and Compliance (3.0 cr)
- BM 3025 - Lean Six Sigma (4.0 cr)
- BM 3034 - Applied Quality (3.0 cr)
- BM 3040 - Industrial Simulation (3.0 cr)
- COMM 3008 - Business Writing (3.0 cr)
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3250 - Operations Management (3.0 cr)
• MGMT 3255 - Logistics and Supply Chain Management (3.0 cr)
• ACCT 2010 - Financial Accounting (3.0 cr)
  or ACCT 2101 - Principles of Accounting I (3.0 cr)
• BM 3053 - Product Development Management (3.0 cr)
  or MGMT 4200 - Project Management (3.0 cr)

Upper-Division Business/Technology Electives
Take 6 or more credit(s) from the following:
• ACCT 3xxx
• ACCT 4xxx
• BM 3xxx
• ENTR 3xxx
• ENTR 4xxx
• FIN 3xxx
• GBUS 3xxx
• ITM 3xxx
• ITM 4xxx
• MGMT 3xxx
• MGMT 4xxx
• MKTG 3xxx
• MKTG 4xxx
• SE 3xxx
• SE 4xxx

Liberal Education
Take 6 or more course(s) totaling 18 or more credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

Open Electives
Students must take enough open elective credits to meet the 120 credit graduation requirement. Approximately 55 credits will be needed.

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

Online
The bachelor of manufacturing management (BMM) in quality management responds to increased employer demand for employees with a solid background in manufacturing techniques combined with a qualification in quality. The quality management degree is transfer friendly and an attractive option for technical college graduates to complete their academic qualification to bachelor level. It is especially tailored to those individuals who would like to become part of the management team within their workplaces. The program is offered on campus and online to respond to the needs of busy working adults who cannot attend any of the classes.

The curriculum for the online program is identical to the on-campus program.
Software Engineering B.S.

Math, Science and Technology

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 61
- This program requires summer terms.
- Degree: Bachelor of Science

As technology penetrates every sector of the economy, software needs are becoming increasingly complex. This need has seen the evolution of a relatively new area of study, software engineering. The US Department of Labor, Bureau of Labor Statistics state that computer software engineering will be among the fastest growing occupations for the next 10 years.

The software engineering program combines the theory behind good software engineering practices along with applied projects throughout the IEEE standardized curriculum. This approach provides graduates the knowledge and skills to be successful in the workplace or in graduate studies.

Program outcomes: graduates will

Show mastery of the software engineering knowledge and skills and professional issues necessary to begin practice as a software engineer.
Work as an individual and as part of a team to develop and deliver quality software artifacts.
Reconcile conflicting project objectives, finding acceptable compromises within limitations of cost, time, knowledge, existing systems, and organizations.
Design appropriate solutions in one or more application domains using software engineering approaches that integrate ethical, social, legal, and economic concerns.
Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for problem identification and analysis, software design, development, implementation, verification, and documentation.
Demonstrate an understanding and appreciation for the importance of negotiation, effective work habits, leadership, and good communication with stakeholders in a typical software development environment.
Learn new models, techniques, and technologies as they emerge and appreciate the necessity of such continuing professional development.

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. For more information, see the graduation requirements.

Program Requirements

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

Software Engineering Core

Take exactly 20 course(s) totaling 60 credit(s) from the following:

- ITM 3110 - Microcomputer Operating Systems (3.0 cr)
- MATH 2010 - Discrete Mathematics (3.0 cr)
- NT 3120 - Networking Standards and Protocols (3.0 cr)
- SE 2050 - Introduction to Programming I (3.0 cr)
SE 2070 - Introduction to Programming II (3.0 cr)
SE 2090 - Data Structures and Algorithms (3.0 cr)
SE 2100 - Microcomputer Systems Architecture (3.0 cr)
SE 2200 - Introduction to Software Engineering (3.0 cr)
SE 2300 - Software Construction (3.0 cr)
SE 2400 - Software Engineering Approach to Human Computer Interaction (3.0 cr)
SE 3050 - Database Management Systems (3.0 cr)
SE 3100 - Object-Oriented Programming (3.0 cr)
SE 3150 - Software Requirements Analysis (3.0 cr)
SE 3200 - Software Design and Architecture (3.0 cr)
SE 3300 - Software Quality Assurance and Testing (3.0 cr)
SE 3900 - Internship (3.0 cr)
SE 4050 - Advanced Web Application Development (3.0 cr)
SE 4200 - Software Project Management (3.0 cr)
SE 4500 - Senior Project I (3.0 cr)
SE 4510 - Senior Project II (3.0 cr)

Liberal Education
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 5 course(s) totaling exactly 17 credit(s) from the following:
- ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
- HUM 3310 - Culture and Technology [HUMANITIES, GLOB PERSP] (3.0 cr)
- MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
- MATH 1271 - Calculus I [MATH THINK] (4.0 cr)
- Physics Choice
  Take one of the following:
  - PHYS 1101 - Introductory College Physics I [PHYS SCI] (4.0 cr)
  or PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)

Technology
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
- CA 1040 - Web Site Development (3.0 cr)

Open Electives
Students must take enough electives to satisfy the 120 credit graduation requirement. Students are encouraged to consider the following minors, or courses from the following minors, as well as the Honors program, to complete their elective requirements: Information Technology Management, Cybersecurity, Graphic Design, Management, Finance, Accounting, International Business, Leadership, and Communication.

Recommended Electives for Financial/ E-Commerce Systems
Take 0 or more credit(s) from the following:
- ACCT 2101 - Principles of Accounting I (3.0 cr)
- ACCT 2102 - Principles of Accounting II (3.0 cr)
- FIN 3100 - Managerial Finance (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MGMT 3270 - Fundamentals of E-Business (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- NT 3215 - Information Assurance and Systems Security (3.0 cr)
**Crookston Campus**

**Sport and Recreation Management B.S.**

*Business*

**Academic Affairs**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 120
- Required credits within the major: 59
- This program requires summer terms.
- Degree: Bachelor of Science

The sport and recreation management program gives students the opportunity to develop knowledge and expertise in sport and recreation with an orientation toward management. It is employment-oriented, designed around active learning and responsive teaching, and technology-driven, focused on communication and human relations.

Program graduates will be able to manage, assist in the management of, or find employment in sport and recreation organizations. Career opportunities include positions in professional sport franchises, sport and recreation facilities, participative sport event management, spectator sport event management, licensed athletic apparel companies, corporate fitness programs, college and university athletic departments, park and tourist attraction sites, community centers, senior centers, health clubs, sport and recreation camps, clinics, and seminars.

Program outcomes:
1. Competencies in general business disciplines (i.e. management, marketing, finance) as related to sport and recreation management;
2. Skills in written and oral communication that relate to the sport and recreation industry;
3. Ability to apply industry-specific technological tools and operating procedures for sport and recreation;
4. Team building skills and the ability to work in groups.

**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**

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. For more information, see the [graduation requirements](http://www.registrar.umn.edu).  

**Program Requirements**

Students must complete 40 upper-division credits.

A maximum of two D grades are allowed for core courses required in the program and technology requirements. This includes grades earned at UMC or transferred in from another institution.

**Sport and Recreation Management Core**

Take 17 or more course(s) totaling exactly 50 credit(s) from the following:
- FIN 3100 - Managerial Finance (3.0 cr)
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
- GBUS 3100 - Career & Professional Development (1.0 cr)
- HSCI 1072 - Wellness (3.0 cr)
- MGMT 3200 - Principles of Management (3.0 cr)
- MKTG 3300 - Principles of Marketing (3.0 cr)
- SRM 2020 - Foundations of Sport and Recreation Management (3.0 cr)
• SRM 3002 - Sport Law and Governance (3.0 cr)
• SRM 3003 - Sport Facility and Activities Management (3.0 cr)
• SRM 3005 - Athletics Administration (3.0 cr)
• SRM 3006 - Sport Marketing and Communication (3.0 cr)
• SRM 3008 - Sport Ethics and Leadership (3.0 cr)
• SRM 3012 - Sport Finance and Economics (3.0 cr)
• SRM 3100 - Psychology of Sport (3.0 cr)
• SRM 3200 - Socio-Cultural Dimensions in Sport (3.0 cr)
• SRM 4800 - Sport and Recreation Management Capstone (3.0 cr)

Choose one of the following:
• ACCT 2010 - Financial Accounting (3.0 cr)
  or ACCT 2101 - Principles of Accounting I (3.0 cr)

• SRM 3900 - Internship (1.0 - 3.0 cr)

**Sport and Recreation Management Electives**
Take exactly 3 course(s) totaling 9 or more credit(s) from the following:
• ACCT 1xxx
• ACCT 2xxx
• ACCT 3xxx
• ACCT 4xxx
• COMM 3710 - Event Planning and Management (3.0 cr)
• COMM 4800 - Crisis Communication (3.0 cr)
• COMM 4900 - Public Relations (3.0 cr)
• ECON 1xxx
• ECON 2xxx
• GBUS 3xxx
• MGMT 3xxx
• MKTG 1xxx
• MKTG 2xxx
• MKTG 3xxx
• MKTG 4xxx
• NATR 1233 - Introduction to Natural Resources (3.0 cr)
• NATR 3203 - Park and Recreation Management (3.0 cr)
• NATR 3344 - Land Use Planning (3.0 cr)

**Liberal Education**
This program requires a minimum of 40 credits of liberal education and completion of the ten goal areas of the Minnesota Transfer Curriculum. The following are specific required liberal education courses.
Take exactly 7 course(s) totaling exactly 21 credit(s) from the following:
• COMP 1011 - Composition I [COMMUNICAT] (3.0 cr)
• COMP 1013 - Composition II [COMMUNICAT] (3.0 cr)
• ECON 2101 - Microeconomics [HI/BEH/SSC] (3.0 cr)
• ECON 2102 - Macroeconomics [HI/BEH/SSC] (3.0 cr)
• MATH 1031 - College Algebra [MATH THINK] (3.0 cr)
• MATH 1150 - Introduction to Statistics [MATH THINK] (3.0 cr)
• COMM 1101 - Public Speaking [COMMUNICAT] (3.0 cr)

**Technology**
Take exactly 1 course(s) totaling exactly 3 credit(s) from the following:
• CA 1xxx
• GBUS 3300 - Business Analytics (3.0 cr)

**Open Electives**
Students must take enough Open Electives credits to meet the 120 credit requirement for graduation.

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

**Online**
The sport and recreation management program gives students the opportunity to develop knowledge and expertise in sport and recreation with an orientation toward management. It is employment-oriented, designed around active learning and responsive
teaching, and technology-driven, focused on communication and human relations.

Program graduates will be able to manage, assist in the management of, or find employment in sport and recreation organizations. Career opportunities include positions in professional sport franchises, sport and recreation facilities, participative sport event management, spectator sport event management, licensed athletic apparel companies, corporate fitness programs, college and university athletic departments, park and tourist attraction sites, community centers, senior centers, health clubs, sport and recreation camps, clinics, and seminars.

Program outcomes:
1. competencies in general business disciplines (i.e. management, marketing, finance) as related to sport and recreation management;
2. skills in written and oral communication that relate to the sport and recreation industry;
3. ability to apply industry-specific technological tools and operating procedures for sport and recreation;
4. team building skills and the ability to work in groups.

The Sport and Recreation Management BS online program has the same curriculum requirements as the on-campus Sport and Recreation Management BS program.
Crookston Campus

Sport and Recreation Management Certificate

Business

Academic Affairs

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 18
- Degree: Sport and Recreation Management Certificate

Coursework in this certificate covers many different aspects of sport and recreation management: management and marketing as it relates to the sport industry, sport ethics, leadership, facility management, event planning, sport communication, psychological, and sociological aspects of sport.

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

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

General Requirements

All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements

Sport and Recreation Management Core

Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- MKTG 3300 - Principles of Marketing (3.0 cr)
- SRM 2020 - Foundations of Sport and Recreation Management (3.0 cr)
- SRM 3003 - Sport Facility and Activities Management (3.0 cr)

Sport and Recreation Management Electives

Take 9 or more credit(s) from the following:
- COMM 3710 - Event Planning and Management (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- SRM 3006 - Sport Marketing and Communication (3.0 cr)
- SRM 3008 - Sport Ethics and Leadership (3.0 cr)
- SRM 3100 - Psychology of Sport (3.0 cr)
- SRM 3200 - Socio-Cultural Dimensions in Sport (3.0 cr)

Only one of the following courses may count towards this requirement.
- SRM 3012 - Sport Finance and Economics (3.0 cr)
- SRM 3002 - Sport Law and Governance (3.0 cr)

Program Sub-plans

A sub-plan is not required for this program.

Online
Crookston Campus
Sport and Recreation Management Minor
Business
Academic Affairs

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 18 to 19

Coursework in this minor covers many different aspects of sport and recreation management: management and marketing as it relates to the sport industry, sport ethics, leadership, facility management, event planning, sport communication, psychological, and sociological aspects of sport.

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)

Minor Requirements
Sport and Recreation Management Core
Take exactly 3 course(s) totaling exactly 9 credit(s) from the following:
- MKTG 3300 - Principles of Marketing (3.0 cr)
- SRM 2020 - Foundations of Sport and Recreation Management (3.0 cr)
- SRM 3003 - Sport Facility and Activities Management (3.0 cr)

Sport and Recreation Management Electives
Take 9 or more credit(s) from the following:
- COMM 3710 - Event Planning and Management (3.0 cr)
- MGMT 3210 - Supervision and Leadership (3.0 cr)
- SRM 3006 - Sport Marketing and Communication (3.0 cr)
- SRM 3008 - Sport Ethics and Leadership (3.0 cr)
- SRM 3100 - Psychology of Sport (3.0 cr)
- SRM 3200 - Socio-Cultural Dimensions in Sport (3.0 cr)
- Only one of the following courses may count towards this requirement.
  - SRM 3012 - Sport Finance and Economics (3.0 cr)
  or SRM 3002 - Sport Law and Governance (3.0 cr)

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

Online
Coursework in this minor (online) covers many different aspects of sport and recreation management: management and marketing as it relates to the sport industry, sport ethics, leadership, facility management, event planning, sport communication, psychological, and sociological aspects of sport. The sport and recreation management minor (online) has the same curriculum as the classroom delivered minor with the exception that a one-credit technology requirement is also required.

Orientation to Online Learning
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- GBUS 1005 - Orientation to Online Learning (1.0 cr)
Crookston Campus
Sustainability Minor
Math, Science and Technology
Academic Affairs

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2021
- Required credits in this minor: 22 to 24

The minor in sustainability is designed to provide students with a fundamental understanding of the three pillars of sustainability-economic growth, environmental stewardship, and social progress-allowing graduates to fully understand, articulate, and implement sustainable practices that will help our society face sustainability-related challenges.

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)

Minor Requirements
Core
Take 5 or more course(s) totaling 13 or more credit(s) from the following:
- BM 3008 - Sustainability and Compliance (3.0 cr)
- ENSC 3003 - Sustainable YoU, Sustainable World [GLOB PERSP, PEOPLE/ENV] (3.0 cr)
- NATR 1226 - Environmental Science and Sustainability [BIOL SCI, PEOPLE/ENV] (3.0 cr)
- SUST 3900 - Sustainability Field Experience (2.0 cr)
- SUST 4100 - Sustainability Capstone (2.0 cr)

Economics and Public Policy Electives
Take 3-4 credits from the following:
- BM 3025 - Lean Six Sigma (4.0 cr)
- FIN 3120 - Money, Financial Markets and Institutions (3.0 cr)
- FIN 3125 - Investments (3.0 cr)
- NATR 3344 - Land Use Planning (3.0 cr)
- NATR 4699 - Integrated Resource Management (3.0 cr)

Social Science and Humanities Electives
Take 3 credits from the following:
- PUBH 3331 - Health Equity and Social Determinants (3.0 cr Rochester)
- COMM 3001 - Human Relationships and Leadership [HUMAN DIV] (3.0 cr)
- COMM 3431 - Persuasion (3.0 cr)
- COMM 4802 - Publication Design and Management (3.0 cr)
- GBUS 3500 - Business Ethics (3.0 cr)
- PHIL 2002 - Introduction to Ethics [HUMANITIES, ETH/CIV RE] (3.0 cr)

Stewardship through Technology and Design
Take 3-4 credits from the following:
- BBE 3201 Sustainability of Food Systems: A Life Cycle Perspective (3.0 cr Twin Cities)
- ANSC 3004 - Livestock Facilities and Environmental Systems (3.0 cr)
- ASM 3360 - Applications in Precision Agriculture (2.0 cr)
- BIOL 3420 - Ecotoxicology (3.0 cr)
- BIOL 3722 - Limnology (3.0 cr)
- ENSC 3124 - Environmental Science and Remediation Techniques (3.0 cr)
- ENSC 4022 - Risk Assessment and Environmental Impact Statements (3.0 cr)
- GNAG 3203 - Ag Products and Processing (3.0 cr)
- HORT 3030 - Landscape Design (4.0 cr)
- ITM 3733 - Green Technology Solutions [PEOPLE/ENV] (3.0 cr)
- NATR 3374 - Ecology [BIOL SCI] (4.0 cr)
- SWM 3224 - Soil and Water Conservation (4.0 cr)
- SWM 3225 - Watershed Management (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Online
The online minor in sustainability is designed to provide students with a fundamental understanding of the three pillars of sustainability-economic growth, environmental stewardship, and social progress-allowing graduates to fully understand, articulate, and implement sustainable practices that will help our society face sustainability-related challenges.

The sustainability minor online degree has identical degree requirements as the sustainability minor on-campus degree.
Crookston Campus
Taxation Certificate
Business
Academic Affairs

- Program Type: Undergraduate credit certificate
- Requirements for this program are current for Fall 2021
- Required credits to graduate with this degree: 15
- Degree: Taxation Certificate

The certificate in taxation is designed to prepare the student for a career in tax preparation, including individual, farm, business, trusts, estates, payroll, and estate taxes. In addition, it prepares the student to pass the registered tax return preparer competency test.

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

General Requirements
All students are required to complete general University and college requirements. For more information, see the graduation requirements.

Program Requirements
Taxation Certificate
Take exactly 5 course(s) totaling exactly 15 credit(s) from the following:
- ACCT 4404 - Income Tax I (3.0 cr)
- ACCT 4405 - Income Tax II (3.0 cr)
- ACCT 4420 - Income Tax Preparation (3.0 cr)
- FIN 3110 - Estate Planning (3.0 cr)
- FIN 3115 - Insurance and Risk Management (3.0 cr)

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

Online
The certificate in taxation is designed to prepare the student for a career in tax preparation, including individual, farm, business, trusts, estates, payroll, and estate taxes. In addition, it prepares the student to pass the registered tax return preparer competency test.

The Taxation Certificate online has the same curriculum as the on-campus Taxation Certificate.
Crookston Campus
Writing Minor
Humanities, Social Sciences, and Education

Academic Affairs

• Program Type: Undergraduate minor related to major
• Requirements for this program are current for Fall 2021
• Required credits in this minor: 21 to 22

The writing minor prepares students to succeed in myriad fields and professional organizations. Concepts learned and skills developed through a writing minor will be advantageous in any career that requires skills in written communication.

Graduates who obtain a writing minor will gain an understanding and appreciation of the English language, develop critical thinking and theoretical application skills through the study of research, and be able to communicate complex ideas through writing in professional settings.

Minor outcomes

Graduates will:
Demonstrate proficiencies in the writing processes through invention, organization, drafting, revision, and editing for professional presentation.
Use authority, point-of-view, and individual voice and style in personal and professional writing.
Participate effectively in groups with emphasis on listening, critical and reflective thinking, and responding.

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)

Minor Requirements

Writing Core
Take exactly 4 course(s) totaling exactly 12 credit(s) from the following:
• WRIT 2110 - Digital Writing (3.0 cr)
• WRIT 2223 - English Grammar and Usage (3.0 cr)
• WRIT 3303 - Writing in Your Profession (3.0 cr)
• WRIT 3856 - Editing (3.0 cr)

Writing Electives
At least 3 writing elective credits must be upper division.
Take 9 or more credit(s) from the following:
• COMM 2110 - Communication Technology Trends (3.0 cr)
• WRIT 1803 - Directed Studies (1.0 - 3.0 cr)
• WRIT 2335 - Introduction to Creative Writing [HUMANITIES] (3.0 cr)
• WRIT 2994 - Introductory Undergraduate Research (1.0 - 3.0 cr)

• Upper-Division Writing Electives
Take 1 or more course(s) totaling 3 or more credit(s) from the following:
• COMM 3008 - Business Writing (3.0 cr)
• COMM 3431 - Persuasion (3.0 cr)
• COMM 3537 - Visual Communication (3.0 cr)
• COMM 3857 - Technical Communication (3.0 cr)
• COMM 4000 - News and Social Media Communication (3.0 cr)
• COMM 3002 - Intercultural Communication [GLOB PERSP] (3.0 cr)
• COMM 4802 - Publication Design and Management (3.0 cr)
• COMM 4850 - Report Writing (3.0 cr)
• WRIT 3804 - Individual Studies (1.0 - 3.0 cr)
• WRIT 3860 - Topics in Writing (3.0 cr)
Program Sub-plans
A sub-plan is not required for this program.

Online
The curriculum requirements for the online writing minor program is the same as the on-campus writing minor program requirements with the addition of GBUS 1005 - Orientation to Online Learning (1 credit).

Orientation to Online Learning
Take exactly 1 course(s) totaling exactly 1 credit(s) from the following:
- GBUS 1005 - Orientation to Online Learning (1.0 cr)