Crookston Campus

Agricultural Education B.S.

Agriculture and Natural Resources

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2022
- Required credits to graduate with this degree: 120
- Required credits within the major: 76 to 80
- 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 requirements.

© 2005 by the Regents of the University of Minnesota
The University of Minnesota is an equal opportunity educator and employer.
Information current as of March 28, 2024

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 6 or more course(s) totaling 18 or more credit(s) from the following:

- AGED 2001 - Career Exploration and Early Experience in Agriculture (1.0 cr)

AGED 3003 - SAE, FFA, and Leadership (3.0 cr)
AGED 3004 - Methods of Teaching Agricultural Education (4.0 cr)
AGED 4700 - Student Teaching: Farm Business Management (1.0 cr)
AGED 4800 - Student Teaching: Middle School (1.0 cr)
AGED 4900 - Student Teaching: High School (8.0 cr)

Agriculture and Natural Resources Core

Take 7 or more course(s) totaling 24 or more credit(s) from the following:

- AGEC 1005 - World Agricultural Food Systems (3.0 cr)

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 10 or more course(s) totaling 22 or more 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 3001 - Perspectives of Substance Use for Educators (1.0 cr)
ED 3009 - Human Relations in Diversity (2.0 cr)
ED 3110 - Educational Psychology (3.0 cr)
ED 3210 - Reading in the Content Area (2.0 cr)
ED 3500 - Introduction to Special Education (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)

Work-Based Learning Endorsement

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

- ED 3033 - Foundations of Work-Based Learning (2.0 cr)
- ED 3034 - Methods of Teaching Work-Based Learning (3.0 cr)
- ED 4600 - Student Teaching: Work-Based Learning (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 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)
- 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)
- ED 2100 - Child and Adolescent Development and Learning [HI/BEH/SSC] (3.0 cr)
- MATH 1031 - College Algebra [MATH THINK] (3.0 cr)

Technology

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

- AGEC 2310 - Agribusiness Financial Records (3.0 cr)

Note: AGEC 2310 will satisfy both the program and technology requirement.

© 2005 by the Regents of the University of Minnesota
The University of Minnesota is an equal opportunity educator and employer.
Information current as of March 28, 2024

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 80 major credits.

Agricultural Science Core

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

- AGRO 1183 - Field Crops: Production Principles (3.0 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)

Liberal Education

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

- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)

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 76 major credits.

Agricultural Systems Engineering Technology Core

Take 3 or more courses totaling 6 or more credits from the following:

ASM 3360 - Applications in Precision Agriculture (2.0 cr)
ASM 3365 - Applications in Precision Agriculture Laboratory (1.0 cr)

ASM Option

ASM 2043 - Welding and Manufacturing Processes (3.0 cr)
or ASM 2053 - Electricity, Controls, and Sensors in Agriculture (3.0 cr)
or ASM 3002 - Agricultural Mobile Power Systems (3.0 cr)

Liberal Education

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

- PHYS 1012 - Introductory Physics [PHYS SCI, PEOPLE/ENV] (4.0 cr)

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 80 major credits.

Natural and Managed Environmental Education Core

Take 3 or more course(s) totaling 10 or more credit(s) from the following:

- 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)

Liberal Education

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

- CHEM 1001 - Introductory Chemistry [PHYS SCI] (4.0 cr)

© 2005 by the Regents of the University of Minnesota
The University of Minnesota is an equal opportunity educator and employer.