Crookston Campus

Animal Science B.S.

Agriculture and Natural Resources

Academic Affairs

- Program Type: Baccalaureate
- Requirements for this program are current for Spring 2022
- 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 - Reproductive Physiology (4.0 cr)
- ANSC 3503 - Animal Health and Disease (3.0 cr)
- ANSC 4204 - Animal Systems Management (3.0 cr)

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•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.

Animal Science
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.

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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 I (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.

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