

Animal Science

Animal Science Major

The Animal Science major encompasses physiology, nutrition, genetics, reproduction, marketing, management, and husbandry of livestock and companion animals; the important scientific understanding for the utilization of animal products; and experiences necessary for leadership in, and advocacy for, industries that provide animals and animal products that benefit humans.

Curriculum Options

Five study options are available for the animal science major.

- **Animal Production, Management and Husbandry:** This option is designed for students desiring a background in the principles of animal management and husbandry. It includes broad training in animal husbandry, production and management. Employment opportunities include careers in livestock production, allied support fields, and in technical support fields including agricultural positions within the Cooperative Extension Service.
- **Animal Biomedical Science:** This option offers students a more scientific approach to animal science, preparing them for veterinary medicine, graduate research in animal science, teaching, food technology and the biotechnology industry. Students may receive an animal science degree while meeting academic requirements for application to veterinary schools.
- **Animal Agribusiness:** This option is designed for students desiring a background in the business and economic principles as they apply to the livestock industry. It leads to broad training in animal husbandry, production, business, and management. Employment opportunities include careers in agribusiness, sales and marketing of livestock and products for the livestock industry, and a variety of public and private institutions which serve the business of animal agriculture.
- **Livestock Media:** This option offers students an opportunity to acquire skills in journalism, advertising, and public relations in addition to the fundamentals of animal science. Employment opportunities include working for a variety of media outlets including print and virtual media, TV, radio, magazines, breed associations, or commodity organizations as well as positions involved in public relations in the livestock industry.
- **Meat Science:** This option provides the opportunity to emphasize knowledge about the science of muscle biology and evaluation and processing of red meat. This option prepares students for a broad variety of career opportunities in the meat industry including management, sales, meat inspection, and meat marketing.

Animal Science Minor

Students from other majors may minor in Animal Science by completing a minimum of 16 credits. A minimum of eight credits must be completed at NDSU.

Major Requirements

Major: Animal Science

Degree Type: B.S.

Required Degree Credits to Graduate: 128

General Education Requirements

First Year Experience (F):

AGRI 189	Skills for Academic Success (Students transferring in 24 or more credits do not need to take AGRI 189.)	1
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Communication (C):

ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
One Course in Upper Level Writing. Select from the following:		3
ENGL 320	Business and Professional Writing	
ENGL 321	Writing in the Technical Professions	
ENGL 324	Writing in the Sciences	

COMM 110	Fundamentals of Public Speaking	3
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Quantitative Reasoning (R):

STAT 330	Introductory Statistics	3
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Science & Technology (S):

Select one sequence from the following based on major option: 10

For Options 1, 2, 4 and 5:

BIOL 111	Concepts of Biology	
CHEM 117 & 117L	Chemical Concepts and Applications and Chem Concepts and Applications Lab	
PLSC 315	Genetics	

For Option 3:

CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory	
CHEM 122	General Chemistry II	
PLSC 315	Genetics	

Humanities & Fine Arts (A): Select from current general education list 6

Social & Behavioral Sciences (B):

ECON 201	Principles of Microeconomics	3
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Select from current general education list 3

Wellness (W): Select from current general education list 2

Cultural Diversity (D): Select from current general education list

Global Perspectives (G):

ECON 201	Principles of Microeconomics	3
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Total Credits 40

Major Requirements

General Education Requirements 40

Required Core Courses for Animal Science

MATH 103	College Algebra (or higher level higher (except MATH 104))	3
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ANSC 114	Introduction to Animal Sciences	3
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Select one of the following (Students transferring in 24 or more credits do not need to take AGRI 150/ANSC 150/VETS 150.): 1

AGRI 150	Agriculture Orientation	
ANSC 150	Animal Science Orientation	
VETS 150	Introduction to the Veterinary Profession	

ANSC 222		2
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ANSC 300	Domestic Animal Behavior and Management	3
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ANSC 323	Fundamentals of Nutrition	3
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ANSC 324	Applied Animal Nutrition	3
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ANSC 463 & 463L	Physiology of Reproduction and Physiology of Reproduction Laboratory	4
ANSC 478	Research and Issues in Animal Agriculture	3
Select one of the following:		3
ANSC 480	Equine Industry and Production Systems	
ANSC 482	Sheep Industry and Production Systems	
ANSC 484	Swine Production/Pork Industry Systems	
ANSC 486	Beef Industry and Production Systems	
ANSC 488	Dairy Industry and Production Systems	
Select one of the following:		1-5
ANSC 494	Individual Study (research experience)	
ANSC 496	Field Experience (internship experience)	
VETS 135	Anatomy and Physiology of Domestic Animals	3
Options: Select one of the five options listed below.		36-41
Students must select one option of interest. The standard option for this major is the Animal Production, Management and Husbandry. Students who wish to declare an option other than the standard option must officially declare that option with the Office of Registration and Records.		
Degree Requirements: Potential of a minimum of 11-20 credits to reach 128.		20-11
Total Credits		128

Option 1: Animal Production, Management, & Husbandry Option - 36-37 Credits

ANSC 370	Fundamentals/Animal Disease	3
BIOL 111L	Concepts of Biology Lab	1
PLSC 110	World Food Crops	3
CHEM 260	Elements of Biochemistry	4
MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab	3
ANSC 320	Dairy Cattle Selection	1-2
or ANSC 330	Meat Selection, Grading and Judging	
or ANSC 331	Livestock Selection	
or ANSC 365	Equine Evaluation	
ANSC 357	Animal Genetics	3
ANSC 380	Livestock Sales and Marketing	2
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Agricultural Marketing	3
PLSC 320	Principles of Forage Production	3
or RNG 336	Introduction to Range Management	
ANSC 340	Principles of Meat Science	3
ANSC 480	Equine Industry and Production Systems	3
or ANSC 482	Sheep Industry and Production Systems	
or ANSC 484	Swine Production/Pork Industry Systems	
or ANSC 486	Beef Industry and Production Systems	
or ANSC 488	Dairy Industry and Production Systems	
Total Credits		36-37

Option 2: Animal Agribusiness Option - 42-43 Credits

BIOL 111L	Concepts of Biology Lab	1
PLSC 110	World Food Crops	3
ANSC 320	Dairy Cattle Selection	1-2
or ANSC 330	Meat Selection, Grading and Judging	

or ANSC 331	Livestock Selection	
or ANSC 365	Equine Evaluation	
ANSC 357	Animal Genetics	3
ANSC 380	Livestock Sales and Marketing	2
ACCT 102	Fundamentals of Accounting	3
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Agricultural Marketing	3
AGEC 246	Introduction to Agricultural Finance	4
AGEC 350	Agrisales	3
or AGECE 420	Integrated Farm and Ranch Management	
ECON 202	Principles of Macroeconomics (will fulfill Social/ Behavioral Science)	3
Animal Agribusiness Electives - 12 Credits (Students may choose from upper level ANSC, AGECE, COMM, ECON, PLSC or RNG)		12
Total Credits		42-43

Option 3: Biomedical Sciences Option - 40-41 Credits

Pre-Veterinary Medicine option - Students interested in veterinary school should consider this option. The option meets most veterinary school prerequisites. Consultation with an adviser is recommended.

CHEM 122L	General Chemistry II Laboratory	1
PHYS 120 & 120L	Fundamentals of Physics and Fundamentals of Physics Laboratory *	4
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
BIOL 151 & 151L	General Biology II and General Biology II Laboratory	4
CHEM 240	Survey of Organic Chemistry *	3
CHEM 260	Elements of Biochemistry *	4
MICR 350 & 350L	General Microbiology and General Microbiology Lab	5
ANSC 320	Dairy Cattle Selection	1-2
or ANSC 330	Meat Selection, Grading and Judging	
or ANSC 331	Livestock Selection	
or ANSC 365	Equine Evaluation	
ANSC 357	Animal Genetics	3
or ANSC 455	Animal Biotechnology	
ANSC 444	Livestock Muscle Physiology	3
Biomed Science Electives- 8 Credits (Students may choose from upper level ANSC, BIOC, BIOL, CHEM, MICR, PHYS OR SAFE)		8
Total Credits		40-41

* or higher level

Option 4: Livestock Media Option - 39 Credits

BIOL 111L	Concepts of Biology Lab	1
PLSC 110	World Food Crops	3
Select one of the following:		2
ANSC 320	Dairy Cattle Selection	
ANSC 330	Meat Selection, Grading and Judging	
ANSC 331	Livestock Selection	
ANSC 365	Equine Evaluation	
ANSC 357	Animal Genetics	3

ANSC 380	Livestock Sales and Marketing	2
AGEC 242	Introduction to Agricultural Management	4
AGEC 244	Agricultural Marketing	3
Complete any minor in the communication area (21 credits) OR complete the following COMM courses:		21
COMM 112	Understanding Media and Social Change	
COMM 114	Human Communication	
or COMM 212	Interpersonal Communication	
or COMM 216	Intercultural Communication	
COMM Electives. Select 15 credits of the following:		
COMM 200	Introduction to Media Writing	
COMM 230	Basic Photography for the Mass Media	
COMM 260	Principles of Internet Web-Based Design	
COMM 261	Introduction to Web Development	
COMM 345	Principles of Broadcast Production	
COMM 362	Principles of Design For Print	
COMM 375	Principles and Practices of Advertising and Public Relations	
COMM 376	Advertising Creative Strategies	
COMM 377	Advertising Media Planning	
COMM 400-level		
Total Credits		39

Option 5: Meat Science Option - 39-40 Credits

BIOL 111L	Concepts of Biology Lab	1
PLSC 110	World Food Crops	3
CHEM 260	Elements of Biochemistry	4
MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab	3
ANSC 330	Meat Selection, Grading and Judging	1-2
ANSC 357	Animal Genetics	3
ANSC 340	Principles of Meat Science	3
ANSC 344	Fundamentals of Meat Processing	2
ANSC 444	Livestock Muscle Physiology	3
AGEC 244	Agricultural Marketing	3
CFS 210	Introduction to Food Science and Technology	2
CFS Electives	300-400 Level	3
Meat Science Electives– 8 Credits (Students may choose from upper level ANSC, BIOG, CFS, CHEM, MICR OR SAFE)		8
Total Credits		39-40

Degree Requirements and Notes:

- Students must earn a minimum 2.00 cumulative GPA for courses that satisfy major requirements.
- Transfer grades must be 'C' or higher to count toward major requirements.

Minor Requirements**Animal Science Minor****Minor Requirements****Required Credits: 16****Required Courses**

ANSC 114	Introduction to Animal Sciences	3
ANSC 223	Introduction to Animal Nutrition	2
ANSC 220	Livestock Production	3
ANSC 222		2

Elective Courses

Must include one of the following courses:

ANSC 300	Domestic Animal Behavior and Management	
ANSC 323	Fundamentals of Nutrition	
ANSC 324	Applied Animal Nutrition	
ANSC 340	Principles of Meat Science	
ANSC 344	Fundamentals of Meat Processing	
ANSC 357	Animal Genetics	
ANSC 370	Fundamentals/Animal Disease	
ANSC 380	Livestock Sales and Marketing	
ANSC 444	Livestock Muscle Physiology	
ANSC 455	Animal Biotechnology	
ANSC 463	Physiology of Reproduction	
ANSC 466	Principles of Mixed Feed Technology, Production and Management	
ANSC 487	Growing and Finishing Cattle Management	

Remaining credits may come from those listed above or the following courses:

ANSC 320	Dairy Cattle Selection	
ANSC 330	Meat Selection, Grading and Judging	
ANSC 331	Livestock Selection	
Total Credits		16

Minor Requirements and Notes:

- A minimum of 8 credits must be taken at NDSU.
- Students must earn a minimum 2.00 GPA for the minor requirements.