ANIMAL SCIENCE

Description
General Information
The field of animal science encompasses the sciences related to animals and their contributions and interactions with humans. This program is designed particularly for students who are interested in pursuing careers associated with the livestock, poultry, meat, and companion animal industries. The core curriculum gives students a balanced education in animal science, biological sciences, physical sciences, mathematics, communications, and humanities and social sciences.

Options
Each animal science student studies a core curriculum that provides a comprehensive look at animal biological systems, use of animal products, and current issues and careers in the animal industries. In addition to the core, there are seven different options from which students can choose an area of focus that meets their own individual interests and career objectives. These options include:

- Biology, Biotechnology and Veterinary Science Option
- Companion Animal Science Option
- Equine Science Option
- Food Animal Systems Option

Midwest Poultry Consortium
Students interested in any aspect of poultry science or avian biology may earn up to 24 credits through the Midwest Poultry Consortium's Undergraduate Center of Excellence in Madison, WI. The credits may be applied toward an animal science degree from the University of Nebraska. Further details are available from the Department of Animal Science.

3+2 year Veterinary Medicine/Animal Science B.S. Degree
Students pursuing a DVM degree at an accredited college of veterinary medicine may obtain a BS degree in animal science, granted by the University of Nebraska, upon successful completion of the first two years of the curriculum in veterinary medicine. To be eligible, students must have completed at least 90 credit hours of pre-professional courses, all Achievement-Centered Education course requirements, and 20 credit hours in animal science courses at the University of Nebraska. Students who successfully complete the 3+2 Program, must provide transcripts and complete the Application for Degree form via MyRED. Students without MyRED access may apply for graduation in person at Husker Hub in the Canfield Administration Building, or by mail. Students should discuss the program with their academic advisor.

College Requirements
College Admission
Requirements for admission into the College of Agricultural Sciences and Natural Resources (CASNR) are consistent with general University admission requirements (one unit equals one high school year): 4 units of English, 4 units of mathematics, 3 units of natural sciences, 3 units of social sciences, and 2 units of world language. Students must also meet performance requirements: a 3.0 cumulative high school grade point average OR an ACT composite of 20 or higher, writing portion not required OR a score of 1040 or higher on the SAT Critical Reading and Math sections OR rank in the top one-half of graduating class; transfer students must have a 2.0 (on a 4.0 scale) cumulative grade point average and 2.0 on the most recent term of attendance.

Admission Deficiencies/Removal of Deficiencies
Students who are admitted to CASNR with core course deficiencies must remove these deficiencies within the first 30 credit hours at the University of Nebraska—Lincoln, or within the first calendar year at Nebraska, whichever takes longer. College-level coursework taken to remove deficiencies may be used to meet degree requirements in CASNR.

Deficiencies in the required entrance subjects can be removed by the completion of specified courses in the University or by correspondence.

The Office of Admissions, Alexander Building (south entrance), City Campus, provides information to new students on how deficiencies can be removed.

College Degree Requirements
Curriculum Requirements
The curriculum requirements of the College consist of three areas: ACE (Achievement-Centered Education), College of Agricultural Sciences and Natural Resources Core, and Degree Program requirements and electives. All three areas of the College Curriculum Requirements are incorporated within the description of the Major/Degree Program sections of the catalog. The individual major/degree program listings of classes ensure that a student will meet the minimum curriculum requirements of the College.

World Languages/Language Requirement
Two units of a world language are required. This requirement is usually met with two years of high school language.

Experiential Learning
All undergraduates in the College of Agricultural Sciences and Natural Resources must take an Experiential Learning (EL) designated course. This may include 0-credit courses designed to document co-curricular activities recognized as Experiential Learning.

Minimum Hours Required for Graduation
The College grants the bachelor's degree in programs associated with agricultural sciences, natural resources, and related programs. Students working toward a degree must earn at least 120 semester hours of credit. A minimum cumulative grade point average of C (2.0 on a 4.0 scale) must be maintained throughout the course of studies and is required for graduation. Some degree programs have a higher cumulative grade point average required for graduation. Please check the degree program on its graduation cumulative grade point average.

Grade Rules
Removal of C-, D, and F Grades
Only the most recent letter grade received in a given course will be used in computing a student's cumulative grade point average if the student has completed the course more than once and previously received a grade or grades below C in that course.

The previous grade (or grades) will not be used in the computation of the cumulative grade point average, but it will remain a part of the academic record and will appear on any transcript.

A student can remove from their cumulative average a course grade of C, D+, D, D-, or F if the student repeats the same course at the University of Nebraska and receives a grade other than P (pass), I (incomplete), N...
(no pass), W (withdrew), or NR (no report). If a course is no longer being offered, it is not eligible for the revised grade point average computation process.

For complete procedures and regulations, see the Office of the University Registrar website at http://www.unl.edu/regrec/course-repeats (http://www.unl.edu/regrec/course-repeats/).

Pass/No Pass
Students in CASNR may take any course offered on a Pass/No Pass basis within the 24-hour limitation established by the Faculty Senate. However, a department may specify that the Pass/No Pass status of its courses be limited to non-majors or may choose to offer some courses for letter grades only.

GPA Requirements
A minimum cumulative grade point average of C (2.0 on a 4.0 scale) must be maintained throughout the course of studies and is required for graduation. Some degree programs have a higher cumulative grade point average required for graduation. Please check the degree program on its graduation cumulative grade point average.

Transfer Credit Rules
To be considered for admission a transfer student, Nebraska resident or nonresident, must have an accumulated average of C (2.0 on a 4.0 scale) and a minimum C average in the last semester of attendance at another college. Transfer students who have completed less than 12 credit hours of college study must submit either ACT or SAT scores.

Ordinarily, credits earned at an accredited college are accepted by the University. The College, however, will evaluate all hours submitted on an application for transfer and reserves the right to accept or reject any of them. Sixty (60) is the maximum number of hours the University will accept on transfer from a two-year college. Ninety (90) is the maximum number of hours the University will accept from a four-year college. Transfer credit in the degree program must be approved by the degree program advisor on a Request for Substitution Form to meet specific course requirements, group requirements, or course level requirements in the major. At least 9 hours in the major field, including the capstone course, must be completed at the University of Nebraska-Lincoln regardless of the number of hours transferred.

The College will accept no more than 10 semester hours of C-, D+, D, and D- grades from other schools. The C-, D+, D, and D- grades can only be applied to free electives. This policy does not apply to the transfer of grades from UNO or UNK to the University of Nebraska-Lincoln.

Joint Academic Transfer Programs
The College of Agricultural Sciences and Natural Resources has agreements with many institutions to support joint academic programs. The transfer programs include dual degree programs and cooperative degree programs. Dual degree programs offer students the opportunity to receive a degree from a participating institution and also to complete the requirements for a bachelor of science degree in CASNR. Cooperative programs result in a single degree from either the University of Nebraska-Lincoln or the cooperating institution.

Dual Degree Programs
A to B Programs
The A to B Program, a joint academic program offered by the CASNR and participating community colleges, allows students to complete the first two years of a degree program at the participating community college and continue their education and study in a degree program leading toward a bachelor of science degree.

The A to B Program provides a basic knowledge plus specialized coursework. Students transfer into CASNR with junior standing.

Depending on the community college, students enrolled in the A to B Program may complete the requirements for an associate of science at the community college, transfer to the University of Nebraska–Lincoln, and work toward a bachelor of science degree.

Participating community colleges include:
- Central Community College
- Metropolitan Community College
- Mid-Plains Community College
- Nebraska College of Technical Agriculture
- Nebraska Indian Community College
- Northeast Community College
- Southeast Community College
- Western Nebraska Community College

3+2 Programs
Two specialized degree programs in animal science and veterinary science are offered jointly with an accredited college or school of veterinary medicine. These two programs permit CASNR animal science or veterinary science students to receive a bachelor of science degree from the University of Nebraska-Lincoln with a degree in animal science or veterinary science after successfully completing two years of the professional curriculum in veterinary medicine at an accredited veterinary school. Students who successfully complete the 3+2 Program, must provide transcripts and complete the Application for Degree form via MyRED. Students without MyRED access may apply for graduation in person at Husker Hub in the Canfield Administration Building, or by mail. Students should discuss these degree programs with their academic advisor.

Cooperative Degree Programs
Academic credit from the University and a cooperating institution are applied towards a four-year degree from either the University of Nebraska-Lincoln (University degree-granting program) or the cooperating institution (non-University degree-granting program). All have approved programs of study.

UNL Degree-Granting Programs
A University of Nebraska-Lincoln degree-granting program is designed to provide students the opportunity to complete a two-year program of study at one of the four-year institutions listed below, transfer to CASNR, and complete the requirements for a bachelor of science degree.

Chadron State College. Chadron State College offers a 2+2 program leading to a grassland ecology and management degree program and a transfer program leading to a bachelor of science in agricultural education in the teaching option.

Wayne State College. Wayne State College offers a 3+1 program leading to a bachelor of science in plant biology in the ecology and management option and a 3+1 program leading to a bachelor of science in Applied Science.
University of Nebraska at Kearney. Transfer programs are available for students pursuing degree programs leading to a bachelor of science degree.

University of Nebraska at Omaha. Transfer programs are available for students pursuing degree programs leading to a bachelor of science degree.

Non University of Nebraska–Lincoln Degree-Granting Programs CASNR cooperates with other institutions to provide coursework that is applied towards a degree at the cooperating institution. Pre-professional programs offered by CASNR allow students to complete the first two or three years of a degree program at the University prior to transferring and completing a degree at the cooperating institution.

Chadron State College–Range Science. The 3+1 Program in range science allows Chadron State College students to pursue a range science degree through Chadron State College. Students complete three years of coursework at Chadron State College and one year of specialized range science coursework (32 credit hours) at CASNR.

Dordt College (Iowa)–Agricultural Education: Teaching Option. This program allows students to pursue an Agricultural Education Teaching Option degree leading toward a bachelor of science in agricultural education. Students at Dordt College will complete 90 credit hours in the Agricultural Education: Teaching Option Transfer Program.

Residency
Students must complete at least 30 of the total hours for their degree using University of Nebraska–Lincoln credits. At least 18 of the 30 credit hours must be in courses offered through CASNR1 (>299) including the appropriate ACE 10 degree requirement or an approved ACE 10 substitution offered through another Nebraska college and excluding independent study regardless of the number of hours transferred. Credit earned during education abroad may be used toward the residency requirement if students register through the University of Nebraska–Lincoln and participate in prior-approved education abroad programs. The University of Nebraska–Lincoln open enrollment and summer independent study courses count toward residence.

1 Includes courses taught by CASNR faculty through interdisciplinary prefixes (e.g., LIFE, MBIO, ENVR, SCIL, EAEP, HRTM, ENSC) and CASNR crosslisted courses taught by non-CASNR faculty.

Online and Distance Education
There are many opportunities to earn college credit online through the University of Nebraska–Lincoln. Some of these credits may be applicable not only as elective credits but also toward the fulfillment of the College’s education requirements. Credits earned online may count toward residency. However, certain offerings may not be counted toward scholarship requirements or academic recognition criteria.

For further information, contact:
Office of Online and Distance Education
University of Nebraska–Lincoln
305 Brace Labs
Lincoln, NE 68588-0109
402-472-4681
http://online.unl.edu/

Independent Study Rules
Students wishing to take part in independent studies must obtain permission; complete and sign a contract form; and furnish copies of the contract to the instructor, advisor, departmental office, and the Dean’s Office. The contract should be completed before registration. Forms are available in 103 Agricultural Hall or online at the CASNR website.

Independent study projects include research, literature review or extension of coursework under the supervision and evaluation of a departmental faculty member.

Students may only count 12 hours of independent study toward their degrees and no more than 6 hours can be counted during their last 36 hours earned, excluding senior thesis, internships, and courses taught under an independent study number.

Other College Degree Requirements

Capstone Course Requirement
A capstone course is required for each CASNR degree program. A capstone course is defined as a course in which students are required to integrate diverse bodies of knowledge to solve a problem or formulate a policy of societal importance.

ACE Requirements
All students must fulfill the Achievement Centered Education (ACE) requirements. Information about the ACE program may be viewed at ace.unl.edu (https://ace.unl.edu/).

The minimum requirements of CASNR reflect the common core of courses that apply to students pursuing degrees in the college. Students should work with an advisor to satisfy ACE outcomes 1, 2, 3, 4, 6, and 10 with the college requirements.

Catalog Rule
Students must fulfill the requirements stated in the catalog for the academic year in which they are first admitted to the University of Nebraska–Lincoln or when they were first admitted to a Joint Academic Transfer Program. Students transferring from a community college, but without admission to a Joint Academic Transfer Program, may be eligible to fulfill the requirements as stated in the catalog for an academic year in which they were enrolled at the community college prior to attending the University of Nebraska-Lincoln. This decision should be made in consultation with academic advisors, provided the student a) was enrolled in a community college during the catalog year they are utilizing, b) maintained continuous enrollment at the previous institution for 1 academic year or more, and c) continued enrollment at the University of Nebraska-Lincoln within 1 calendar year from their last term at the previous institution. In consultation with advisors, a student may choose to follow a subsequent catalog for any academic year in which they are admitted to and enrolled as a degree-seeking student at the University of Nebraska–Lincoln in the College of Agricultural Sciences and Natural Resources. Students must complete all degree requirements from a single catalog year. The catalog which a student follows for degree requirements may not be more than 10 years old at the time of graduation.

Learning Outcomes
Graduates of animal science will be able to:

1. Develop professional competencies related to navigating and achieving professional goals with application to Animal Science.
   - Communication. Develop and apply multiple types of communication skills for delivery to diverse audiences.
2. Demonstrate knowledge of fundamental Animal Science principles.

- Nutrition
  - Describe classes and functional roles of nutrients.
  - Outline species-specific methods of nutrient digestion and absorption.
  - Formulate and evaluate diets relative to life stages.
  - Compare the nutrient profile and quantity of diets on a dry matter vs. as-fed basis.
  - Properly interpret feed labels and nutrient analysis data.
  - Describe the interaction of nutrition with animal systems relative to performance and well-being goals.

- Breeding & Genetics
  - Describe how animal health, fitness, and performance are a result of the animals’ genetics, their environment, and the interaction of those genetics with the environment.
  - Reliably evaluate animals to inform decisions with regards to genetic selection.
  - Discern among traditional and evolving approaches (quantitative, molecular) that may be used to address genetic questions and challenges across species.
  - Communicate contributions of genetics to sustainability of livestock and companion animal enterprises.

- Physiology
  - Describe how tissues and their functions integrate to maintain whole body systems.
  - Apply knowledge of body systems to solve physiological problems.
  - Utilize animal physiological principles to improve or enhance animal production practices.

- Meats
  - Discuss the nutritional value of animal products.
  - Outline the biological structure of muscle and the conversion of muscle to meat.
  - Explain how value of meat products is determined and enhanced for producers, retailers, and consumers.
  - Discuss methods by which the industry and consumers can assure food safety.
  - Outline the flow of products from production to consumption.

- Animal behavior, health, and welfare
  - Outline biological mechanisms by which the body functions to maintain a healthy state.
  - Identify and explain the five freedoms of animal welfare.

- Describe species-specific behaviors and how those behaviors relate to effective animal handling and welfare.
- Evaluate animal care and management programs.
- Define, measure, and assess animal behavior, health, and welfare.
- Navigate difficult conversations about animal production systems from the lens of human responsibility to animals and the social contract between agriculture and society.

3. Apply Animal Science knowledge to address issues related to animal products and/or animal systems.

- Interpret and evaluate animal science concepts pertaining to targeted outcomes/interactions.
- Integrate knowledge from multiple disciplines to positively impact animal systems of interest.
- Articulate the thought process used in solving problems and making decisions.

Major Core Requirements

The following basic courses are required for majors in animal science. In addition, students must select and meet the requirements of one of the animal science options, depending on their own individual interests and career objectives.

<table>
<thead>
<tr>
<th>College Integrative Course (ACE 8)</th>
<th>Credit Hours Subtotal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCIL 101 Science and Decision-Making for a Complex World</td>
<td>3</td>
</tr>
</tbody>
</table>

Professional Departmental Requirements

| ASCI 101 Animal Sciences Orientation Seminar or PVET 101 Success in Veterinary Science | 1 |
| ASCI 201 Professional Development for Careers in Animal Science | 1 |
| ASCI 391 Networking with Animal Science Industry Professionals | 1 |

Select one Capstone course (ACE 10) from the following according to your option:

- ASCI 450 Horse Management
- ASCI 455 Beef Cow-Calf Management
- ASCI 457 Beef Feedlot Management
- ASCI 458 Advanced Companion Animal Biology
- ASCI 486 Animal Biological Systems

Core Disciplinary Requirements

| ASCI 100 Fundamentals of Animal Biology and Industry | 3 |
| ASCI 100L Fundamentals of Animal Biology and Industry Laboratory | 1 |
| ASCI 210 Principles of Animal Products for Today's Society | 2 |
| ASCI 220 Feeds and Feeding | 2 |
| ASCI 270 Fundamentals of Animal Behavior and Welfare | 2 |
| ASCI 330 Animal Breeding and Genetics | 4 |
| ASCI 341 Physiology and Management of Reproduction | 4 |
| PLAS 215 Genetics | 1 |
or BIOS 206 General Genetics
Credit Hours Subtotal: 22

**Basic Animal Management Requirements**
Select 4 credits from at least 2 of 4 Species Categories: 4

<table>
<thead>
<tr>
<th>Livestock Species Management (Beef &amp; Dairy Cattle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 250A Basic Beef Cow-Calf Management</td>
</tr>
<tr>
<td>ASCI 250B Basic Beef Stocker and Feedlot Management</td>
</tr>
<tr>
<td>ASCI 250M Basic Dairy Management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Livestock Species Management (Non-bovine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 250K Basic Swine Management</td>
</tr>
<tr>
<td>ASCI 250P Basic Poultry Management</td>
</tr>
<tr>
<td>ASCI 250R Basic Small Ruminant Management</td>
</tr>
</tbody>
</table>

**Companion Animals**

<table>
<thead>
<tr>
<th>ASCI 251A Basic Companion Animal Management - Dog</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 251B Basic Companion Animal Management - Cat</td>
</tr>
<tr>
<td>ASCI 251E Basic Companion Animal Management - Small Mammals</td>
</tr>
<tr>
<td>ASCI 251J Basic Companion Animal Management - Non-Domesticated/Specialty</td>
</tr>
</tbody>
</table>

**Equine**

<table>
<thead>
<tr>
<th>ASCI 252A Introduction to the Horse Industry and Management 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 252B Basic Equine Management 3</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

**Natural Sciences**
Select one of the following: 4

<table>
<thead>
<tr>
<th>ASCI 120 Animal Biology</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 101 General Biology &amp; BIOS 101L General Biology Laboratory</td>
</tr>
<tr>
<td>LIFE 120 Fundamentals of Biology I</td>
</tr>
<tr>
<td>LIFE 120L Fundamentals of Biology I laboratory 4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

**Mathematics and Statistics (ACE 3)**

| STAT 218 Introduction to Statistics |

Select one of the following: 3-5

<table>
<thead>
<tr>
<th>MATH 102 Trigonometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 103 College Algebra and Trigonometry</td>
</tr>
<tr>
<td>MATH 104 Applied Calculus</td>
</tr>
<tr>
<td>MATH 106 Calculus I</td>
</tr>
<tr>
<td>MATH 203 Contemporary Mathematics</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 8

**Communications**

**Written Communications (ACE 1)**
Select one of the following: 3

<table>
<thead>
<tr>
<th>ENGL 150 Writing and Inquiry</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 151 Writing for Change</td>
</tr>
<tr>
<td>ENGL 254 Writing and Communities</td>
</tr>
<tr>
<td>JGEN 120 Basic Business Communication</td>
</tr>
<tr>
<td>JGEN 200 Technical Communication I</td>
</tr>
<tr>
<td>JGEN 300 Technical Communication II</td>
</tr>
</tbody>
</table>

**Oral Communications (ACE 2)**
Select one of the following: 3

<table>
<thead>
<tr>
<th>ALEC 102 Interpersonal Skills for Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101 Communication in the 21st Century</td>
</tr>
<tr>
<td>COMM 209 Public Speaking</td>
</tr>
<tr>
<td>COMM 210 Communicating in Small Groups</td>
</tr>
<tr>
<td>COMM 215 Visual Communication</td>
</tr>
<tr>
<td>COMM 283 Interpersonal Communication</td>
</tr>
<tr>
<td>COMM 286 Business and Professional Communication</td>
</tr>
<tr>
<td>JGEN 300 Technical Communication II</td>
</tr>
<tr>
<td>MRKT 257 Sales Communication</td>
</tr>
<tr>
<td>TMFD 121 Visual Communication with Animation</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 6

**Economics, Humanities and Social Sciences**
Select one of the following: 5

<table>
<thead>
<tr>
<th>AECN 141 Introduction to the Economics of Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 200 Economic Essentials and Issues</td>
</tr>
<tr>
<td>ECON 211 Principles of Macroeconomics</td>
</tr>
<tr>
<td>ECON 212 Principles of Microeconomics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACE 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE 7</td>
</tr>
<tr>
<td>ACE 9</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 12

**Total Credit Hours**: 62

---

1. BIOS 206 requires both LIFE 120 & LIFE 120L and LIFE 121 & LIFE 121L as prerequisites.
2. Equine option students are required to complete ASCI 252A.
3. Students may not receive credit for both ASCI 252A and ASCI 252B for fulfillment of this requirement.
4. LIFE 120 & LIFE 120L required for the Biology, Biotechnology, and Veterinary Science option.
5. Higher level AECN courses (specifically AECN 201) require completion of AECN 141 or ECON 212.

**Select one of the following options:**

**Biology, Biotechnology and Veterinary Science Option**
This option is designed for students planning a career in veterinary medicine and provides for completion of the pre-veterinary course requirements for application to the joint University of Nebraska/Iowa State University program for the doctorate of veterinary medicine (DVM) degree. However, it can easily be adapted to meet specific requirements for other colleges of veterinary medicine. Courses in animal management, nutrition, physiology and related areas complement the foundational science courses and provide a comprehensive background for careers in veterinary medicine. Completion of the option also provides excellent preparation for graduate study or other professional programs in the biological sciences. Students admitted to veterinary college after three years of undergraduate study may earn a bachelor of science degree through a 3+2 program (three years of undergraduate study plus two years of veterinary school).

**Departmental Requirements**

**Written Communication**
Select a 2nd written communication course required for veterinary school

Credit Hours Subtotal: 3

**Natural Sciences (ACE 4)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 109A</td>
<td>General Chemistry I &amp; General Chemistry I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 109L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 110A</td>
<td>General Chemistry II &amp; General Chemistry II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 110L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 251</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 253</td>
<td>Organic Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIOC 401</td>
<td>Elements of Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>LIFE 121</td>
<td>Fundamentals of Biology II &amp; Fundamentals of Biology II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 141</td>
<td>Physics for Life Sciences I ¹</td>
<td>5</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 24

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 340</td>
<td>Animal Physiological Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Nutrition**

Select 1 from the following: 2-3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 320</td>
<td>Animal Nutrition and Feeding</td>
<td></td>
</tr>
<tr>
<td>ASCI 321</td>
<td>Companion Animal Nutrition</td>
<td></td>
</tr>
<tr>
<td>ASCI 322</td>
<td>Equine Nutrition</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Animal Disciplinary Courses**

Select 6 hours from the following: 6

**Behavior:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 271</td>
<td>Companion Animal and Equine Behavior</td>
<td></td>
</tr>
<tr>
<td>ASCI 370</td>
<td>Animal Welfare</td>
<td></td>
</tr>
<tr>
<td>ASCI 445</td>
<td>Equine and Canine Exercise Science</td>
<td></td>
</tr>
</tbody>
</table>

**Nutrition:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 421</td>
<td>Advanced Animal Nutrition</td>
<td></td>
</tr>
<tr>
<td>ASCI 422</td>
<td>Advanced Feeding and Feed Formulation</td>
<td></td>
</tr>
</tbody>
</table>

**Breeding/Genetics:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 431</td>
<td>Advanced Animal Breeding</td>
<td></td>
</tr>
<tr>
<td>ASCI 432</td>
<td>Genome Analysis</td>
<td></td>
</tr>
</tbody>
</table>

**Reproduction:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 342</td>
<td>Equine Reproduction</td>
<td></td>
</tr>
<tr>
<td>ASCI 441</td>
<td>New Techniques in Reproductive Biology</td>
<td></td>
</tr>
<tr>
<td>ASCI 442</td>
<td>Endocrinology</td>
<td></td>
</tr>
</tbody>
</table>

**Physiology/Health:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 443</td>
<td>Physiology of Animal Cells and Tissues</td>
<td></td>
</tr>
<tr>
<td>ASCI 444</td>
<td>Domestic Animal Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOS 312</td>
<td>Microbiology &amp; Microbiology Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOS 314</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VBMS 303</td>
<td>Principles and Prevention of Livestock Diseases</td>
<td></td>
</tr>
<tr>
<td>VBMS 406</td>
<td>Introduction to the Principles of Biosecurity and Disease Transmission</td>
<td></td>
</tr>
<tr>
<td>VBMS 407</td>
<td>Introduction to Veterinary Anatomy</td>
<td></td>
</tr>
<tr>
<td>VBMS 408</td>
<td>Functional Histology</td>
<td></td>
</tr>
<tr>
<td>VBMS 410</td>
<td>General Pharmacology and Toxicology</td>
<td></td>
</tr>
<tr>
<td>VBMS 425</td>
<td>Wildlife Health</td>
<td></td>
</tr>
</tbody>
</table>

**Meat Science:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 310</td>
<td>Fresh Meats</td>
<td></td>
</tr>
<tr>
<td>ASCI 411</td>
<td>HACCP and Food Safety Systems for the Food Industry</td>
<td></td>
</tr>
</tbody>
</table>

Advanced Management: ²

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 450</td>
<td>Horse Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 455</td>
<td>Beef Cow-Calf Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 457</td>
<td>Beef Feedlot Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 458</td>
<td>Advanced Companion Animal Biology</td>
<td></td>
</tr>
<tr>
<td>ASCI 486</td>
<td>Animal Biological Systems</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 11-12

**Experiential Learning (4 hours required)**

Hands-on Skills Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 150</td>
<td>Animal Production Skills</td>
<td>1-2</td>
</tr>
<tr>
<td>or ASCI 197</td>
<td>Animal Science Skills</td>
<td></td>
</tr>
</tbody>
</table>

Off-campus Industry Exposure ³

Complete minimum of 2 credits associated with on-site industry exposure (internship, study tours, competitive teams) 2-3

**Study Tours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 310</td>
<td>Study Tours in International Agriculture</td>
<td></td>
</tr>
<tr>
<td>ASCI 311A</td>
<td>Equine Industry Study Tour</td>
<td></td>
</tr>
<tr>
<td>ASCI 311B</td>
<td>Meat Industry Study Tour</td>
<td></td>
</tr>
<tr>
<td>ASCI 311E</td>
<td>Beef Industry Study Tour</td>
<td></td>
</tr>
</tbody>
</table>

**Competitive Teams**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 300D</td>
<td>Principles of Meat Animal Evaluation</td>
<td></td>
</tr>
<tr>
<td>ASCI 400A</td>
<td>Advanced Meat Grading and Evaluation</td>
<td></td>
</tr>
<tr>
<td>ASCI 400B</td>
<td>Advanced Livestock Evaluation and Judging</td>
<td></td>
</tr>
<tr>
<td>ASCI 400E</td>
<td>Advanced Horse Evaluation and Judging</td>
<td></td>
</tr>
</tbody>
</table>

Internship, Extension, Research, Teaching

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 395A</td>
<td>Experiential Learning for Career Development in Animal Sciences - Industry Experiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 395B</td>
<td>Extension and Service Experiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 395D</td>
<td>Research Experiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 395E</td>
<td>Experiential Learning for Career Development in Animal Sciences - Undergraduate Teaching Experience</td>
<td></td>
</tr>
<tr>
<td>ASCI 419</td>
<td>Meat Investigations</td>
<td></td>
</tr>
<tr>
<td>ASCI 490A</td>
<td>Animal Science Internship - Beef Feedlot Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 499H</td>
<td>Honors Thesis</td>
<td></td>
</tr>
<tr>
<td>GRAS 490</td>
<td>Internship Experience in Grazing Livestock Systems</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

**Business**

Select 1 course from the listing of Business Courses provided. 3

Credit Hours Subtotal: 3

**Free Electives**

Select 8-11 hours of electives 8-11

Credit Hours Subtotal: 8-11

Total Credit Hours 53-57

¹ PHYS 141 is a required course for admittance to most colleges of veterinary medicine, including the ISU CVM. Although PHYS 142 is not
required for admission to the ISU CVM, it is required by other colleges of veterinary medicine including KSU.

2 Animal Management courses cannot be used in the option and to meet ACE 10 requirements.

3 Students are strongly recommended to complete a veterinary based internship before applying to vet school.

**Companion Animal Science Option**

Designed for students with a specific interest in companion animals. For students interested in pursuing a career in the companion animal industry, this option provides an overview of the general animal sciences in combination with a concentrated study of animal behavior and human interactions along with companion animal breeding and genetics, nutrition, reproduction, care, and management.

**Departmental Requirements**

**Natural Sciences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 105A</td>
<td>Chemistry in Context I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 105L</td>
<td>and Chemistry in Context I Laboratory</td>
<td></td>
</tr>
<tr>
<td>or CHEM 109A</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 109L</td>
<td>and General Chemistry I Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 106A</td>
<td>Chemistry in Context II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 106L</td>
<td>and Chemistry in Context II Laboratory</td>
<td></td>
</tr>
<tr>
<td>or CHEM 110A</td>
<td>General Chemistry II</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 110L</td>
<td>and General Chemistry II Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

**Companion Animal Disciplinary Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 171</td>
<td>Human-Companion Animal Interactions</td>
<td>2</td>
</tr>
<tr>
<td>ASCI 340</td>
<td>Animal Physiological Systems</td>
<td>3</td>
</tr>
<tr>
<td>or ASCI 240</td>
<td>Anatomy and Physiology of Domestic Animals</td>
<td></td>
</tr>
<tr>
<td>ASCI 271</td>
<td>Companion Animal and Equine Behavior</td>
<td>3</td>
</tr>
<tr>
<td>ASCI 321</td>
<td>Companion Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>ACE 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASCI 458</td>
<td>Advanced Companion Animal Biology</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 19

**Other Companion Animal Disciplinary Courses.**

Select 6-10 credit hours from the following: 6-10

**Behavior:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 370</td>
<td>Animal Welfare</td>
<td></td>
</tr>
<tr>
<td>ASCI 445</td>
<td>Equine and Canine Exercise Science</td>
<td></td>
</tr>
<tr>
<td>BIOS 462</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>PSYC 461</td>
<td>Animal Learning &amp; Cognition</td>
<td></td>
</tr>
</tbody>
</table>

**Meat Science:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 310</td>
<td>Fresh Meats</td>
<td></td>
</tr>
<tr>
<td>ASCI 410</td>
<td>Processed Meats</td>
<td></td>
</tr>
<tr>
<td>ASCI 411</td>
<td>HACCP and Food Safety Systems for the Food Industry</td>
<td></td>
</tr>
</tbody>
</table>

**Nutrition:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 322</td>
<td>Equine Nutrition</td>
<td></td>
</tr>
<tr>
<td>ASCI 421</td>
<td>Advanced Animal Nutrition</td>
<td></td>
</tr>
<tr>
<td>ASCI 422</td>
<td>Advanced Feeding and Feed Formulation</td>
<td></td>
</tr>
</tbody>
</table>

**Breeding & Genetics:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 431</td>
<td>Advanced Animal Breeding</td>
<td></td>
</tr>
<tr>
<td>ASCI 432</td>
<td>Genome Analysis</td>
<td></td>
</tr>
</tbody>
</table>

**Reproduction:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 342</td>
<td>Equine Reproduction</td>
<td></td>
</tr>
<tr>
<td>ASCI 441</td>
<td>New Techniques in Reproductive Biology</td>
<td></td>
</tr>
<tr>
<td>ASCI 442</td>
<td>Endocrinology</td>
<td></td>
</tr>
</tbody>
</table>

**Physiology & Health:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 443</td>
<td>Physiology of Animal Cells and Tissues</td>
<td></td>
</tr>
<tr>
<td>ASCI 444</td>
<td>Domestic Animal Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOS 111</td>
<td>Introduction to Microbiology and Human Health</td>
<td></td>
</tr>
<tr>
<td>VBMS 303</td>
<td>Principles and Prevention of Livestock Diseases</td>
<td></td>
</tr>
<tr>
<td>VBMS 406</td>
<td>Introduction to the Principles of Biosecurity and Disease Transmission</td>
<td></td>
</tr>
</tbody>
</table>

**Other Advanced Management:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 450</td>
<td>Horse Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 455</td>
<td>Beef Cow-Calf Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 457</td>
<td>Beef Feedlot Management</td>
<td></td>
</tr>
<tr>
<td>ASCI 486</td>
<td>Animal Biological Systems</td>
<td></td>
</tr>
</tbody>
</table>

**Zoo & Exotics:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRES 125</td>
<td>Introduction to Zoo and Aquarium Science</td>
<td></td>
</tr>
<tr>
<td>NRES 211</td>
<td>Introduction to Conservation Biology</td>
<td></td>
</tr>
<tr>
<td>NRES 220</td>
<td>Principles of Ecology</td>
<td></td>
</tr>
<tr>
<td>NRES 441</td>
<td>Zoo Keeping and Management</td>
<td></td>
</tr>
</tbody>
</table>

**Experiential Learning (must complete minimum of 4 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 150</td>
<td>Animal Production Skills</td>
<td>2</td>
</tr>
<tr>
<td>or ASCI 197</td>
<td>Animal Science Skills</td>
<td></td>
</tr>
</tbody>
</table>

**Hands-on Skills Courses**

Complete minimum of 2 credits associated with on-site industry exposure (internship, study tours, competitive teams)

**Study Tours:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 310</td>
<td>Study Tours in International Agriculture</td>
<td></td>
</tr>
</tbody>
</table>

**Competitive Teams:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 361</td>
<td>Equestrian Team Horsemanship/Equitation</td>
<td></td>
</tr>
</tbody>
</table>

**Internship Extension, Research or Teaching**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 395A</td>
<td>Experiential Learning for Career Development in Animal Sciences - Industry Experiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 395B</td>
<td>Extension and Service Experiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 395D</td>
<td>Research Experiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 395E</td>
<td>Experiential Learning for Career Development in Animal Sciences - Undergraduate Teaching Experience</td>
<td></td>
</tr>
<tr>
<td>ASCI 499H</td>
<td>Honors Thesis</td>
<td></td>
</tr>
</tbody>
</table>

**Business, Communication, & Education Courses**

Select at least 1 communication/education course from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEC 136</td>
<td>Fundamentals of Agricultural and Environmental Sciences Communication</td>
<td></td>
</tr>
<tr>
<td>ALEC 207</td>
<td>Communicating Science with Public Audiences</td>
<td></td>
</tr>
<tr>
<td>ALEC 260</td>
<td>Introduction to Digital Media in Agricultural and Environmental Sciences</td>
<td></td>
</tr>
<tr>
<td>ALEC 330</td>
<td>Foundations of Cooperative Extension</td>
<td></td>
</tr>
</tbody>
</table>
Equine Science Option

Designed for students with a specific interest in the equine area. For students interested in pursuing a career in the equine industry this option provides a combination of general animal sciences with a concentrated study of equitation, evaluation, nutrition, reproduction, and management of equines.

Departmental Requirements

Natural Sciences (ACE 4)  

8

CHEM 105A Chemistry in Context I  
and Chemistry in Context I Laboratory  
CHEM 105L or CHEM 109A General Chemistry I  
and General Chemistry I Laboratory  
CHEM 109L

Equine Disciplinary Courses  

2

ASCI 340 Animal Physiological Systems  
ASCI 240 Anatomy and Physiology of Domestic Animals  
ASCI 271 Companion Animal and Equine Behavior  
ASCI 322 Equine Nutrition  
ASCI 342 Equine Reproduction  
ASCI 445 Equine and Canine Exercise Science  
ACE 10

ASCI 450 Horse Management

Other Advanced Disciplinary & Management Courses  

2-3

Select 1 course from the following:

Nutrition:

ASCI 321 Companion Animal Nutrition  
ASCI 421 Advanced Animal Nutrition  
ASCI 422 Advanced Feeding and Feed Formulation

Breeding & Genetics:

ASCI 431 Advanced Animal Breeding

Experiential Learning (must complete minimum of 4 credits)  

7-8

Hands-on Skills Courses  

3

ASCI 197 Animal Science Skills  
ASCI 260 Basic Equitation  
or ASCI 360 Advanced Equitation

Select 1 additional Equine focused skills course (1 credit) from the Skills Courses list. See Advisor

ASCI 260 Basic Equitation  
or ASCI 360 Advanced Equitation

Equine Judging Course  

2

ASCI 300E Principles of Horse Evaluation and Judging

Study Tours  

AGRI 310 Study Tours in International Agriculture  
ASCI 311A Equine Industry Study Tour

Competitive Teams  

3

ASCI 361 Equestrian Team Horsemanship/Equitation  
ASCI 400E Advanced Horse Evaluation and Judging  
Internship, Extension, Research or Teaching  

4

ASCI 395A Experiential Learning for Career Development in Animal Sciences - Industry Experiences  
ASCI 395B Extension and Service Experiences  
ASCI 395D Research Experiences  
ASCI 395E Experiential Learning for Career Development in Animal Sciences - Undergraduate Teaching Experience  
ASCI 499H Honors Thesis

Credit Hours Subtotal:  

42-44
### Business, Communication & Education Courses

Select 9 credits from either of both of the following categories:

**Business - see Business Course Listing**

**Communication & Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEC 136</td>
<td>Fundamentals of Agricultural and Environmental Sciences Communication</td>
</tr>
<tr>
<td>ALEC 207</td>
<td>Communicating Science with Public Audiences</td>
</tr>
<tr>
<td>ALEC 260</td>
<td>Introduction to Digital Media in Agricultural and Environmental Sciences</td>
</tr>
<tr>
<td>ALEC 330</td>
<td>Foundations of Cooperative Extension</td>
</tr>
</tbody>
</table>

**Free Electives: 13-17**

Credit Hours Subtotal: 22-26

Total Credit Hours 64-70

---

1. CHEM 105A/HCHEM 105L and CHEM 106A/HCHEM 106L do not provide adequate preparation for advanced chemistry or graduate school within the life sciences. If you desire this advanced training, you are strongly encouraged to take CHEM 109A/HCHEM 109L and CHEM 110A/HCHEM 110L. Many graduate programs also require organic chemistry. CHEM 251 and CHEM 253 are recommended.

2. Within the ASCI core, Equine option students must take ASCI 450.

3. Credit granted only for those who compete on traveling UNL teams; junior college judging credit NOT accepted. Limited to 2 credits.

4. Pre-experience learning plan must be completed and approved BEFORE experience begins. Internship credit will NOT be awarded for internships or work experience previously completed. An oral or poster presentation is required.

---

### Food Animal Systems Option

This option is designed for students interested in careers related to the production and management of beef cattle, dairy cattle, horses, poultry, and swine. Although students may emphasize a particular industry or production system, the option provides a balanced study of animal nutrition, meat animal products, reproductive physiology, breeding and genetics, and business management of animal production systems. Completion of this option provides excellent preparation for those wishing to be involved in production agriculture and the abundance of allied industries that support animal agriculture.

**Departmental Requirements**

**Food Animal Systems Option**

**Natural Sciences**

**Chemistry**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 105A</td>
<td>Chemistry in Context I and Chemistry in Context I Laboratory</td>
</tr>
<tr>
<td>CHEM 105L</td>
<td>and General Chemistry I Laboratory</td>
</tr>
<tr>
<td>CHEM 106A</td>
<td>Chemistry in Context II and Chemistry in Context II Laboratory</td>
</tr>
<tr>
<td>CHEM 106L</td>
<td>and General Chemistry II Laboratory</td>
</tr>
</tbody>
</table>

**Animal Health**

Select 1 course from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 111</td>
<td>Introduction to Microbiology and Human Health</td>
</tr>
<tr>
<td>BIOS 312</td>
<td>Microbiology</td>
</tr>
<tr>
<td>VBMS 303</td>
<td>Principles and Prevention of Livestock Diseases</td>
</tr>
<tr>
<td>VBMS 406</td>
<td>Introduction to the Principles of Biosecurity and Disease Transmission</td>
</tr>
</tbody>
</table>

**Food Animal Systems Disciplinary Courses**

**Meat Science:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 200</td>
<td>Animal and Carcass Evaluation</td>
</tr>
<tr>
<td>ASCI 210L</td>
<td>Principles of Animal Products Laboratory</td>
</tr>
</tbody>
</table>

**Animal Physiology:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 340</td>
<td>Animal Physiological Systems</td>
</tr>
<tr>
<td>ASCI 240</td>
<td>Anatomy and Physiology of Domestic Animals</td>
</tr>
</tbody>
</table>

**Nutrition:**

Select 1 course from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 220</td>
<td>Animal Nutrition and Feeding</td>
</tr>
<tr>
<td>ASCI 221</td>
<td>Companion Animal Nutrition</td>
</tr>
</tbody>
</table>

Other Disciplinary & Animal Science Management Courses 6

Select 2 from the following:

**AGRO/PLAS & Range Science:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAS 153</td>
<td>Soil Resources</td>
</tr>
<tr>
<td>PLAS 240</td>
<td>Forage Crop and Pasture Management</td>
</tr>
<tr>
<td>PLAS 245</td>
<td>Introduction to Grassland Ecology and Management</td>
</tr>
<tr>
<td>PLAS 340</td>
<td>Range Management and Improvement</td>
</tr>
<tr>
<td>PLAS 440</td>
<td>Great Plains Ecosystem</td>
</tr>
</tbody>
</table>

**Behavior/Welfare:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 370</td>
<td>Animal Welfare</td>
</tr>
</tbody>
</table>

**Breeding/Genetics**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 431</td>
<td>Advanced Animal Breeding</td>
</tr>
<tr>
<td>ASCI 432</td>
<td>Genome Analysis</td>
</tr>
</tbody>
</table>

**Reproduction:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 441</td>
<td>New Techniques in Reproductive Biology</td>
</tr>
<tr>
<td>ASCI 442</td>
<td>Endocrinology</td>
</tr>
</tbody>
</table>

**Meat Science:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 310</td>
<td>Fresh Meats</td>
</tr>
<tr>
<td>ASCI 411</td>
<td>HACCP and Food Safety Systems for the Food Industry</td>
</tr>
</tbody>
</table>

Advanced AECN, FINA, ECON (300+) excluding AECN 388

Advanced Animal Systems Management: 3

Select 2nd course that differs from the course used to fulfill ACE 10 requirement within the Core.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 410</td>
<td>Processed Meats</td>
</tr>
<tr>
<td>ASCI 450</td>
<td>Horse Management</td>
</tr>
<tr>
<td>ASCI 455</td>
<td>Beef Cow-Calf Management</td>
</tr>
<tr>
<td>ASCI 457</td>
<td>Beef Feedlot Management</td>
</tr>
</tbody>
</table>

**Experiential Learning**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 150</td>
<td>Animal Production Skills</td>
</tr>
<tr>
<td>ASCI 456</td>
<td>Beef Cattle Merchandising</td>
</tr>
<tr>
<td>ASCI 197</td>
<td>Animal Science Skills</td>
</tr>
</tbody>
</table>

Hand-on Skills Courses: 1-2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 150</td>
<td>Animal Production Skills</td>
</tr>
<tr>
<td>ASCI 456</td>
<td>Beef Cattle Merchandising</td>
</tr>
<tr>
<td>ASCI 197</td>
<td>Animal Science Skills</td>
</tr>
</tbody>
</table>

Off-Campus Industry Exposure 2-3
Complete minimum of 2 credits associated with on-site industry exposure (internships, study tours, competitive teams)

**Study Tours**
- ASCI 311B Meat Industry Study Tour
- ASCI 311E Beef Industry Study Tour
- AGRI 310 Study Tours in International Agriculture

**Competitive Teams**
- ASCI 300D Principles of Meat Animal Evaluation
- ASCI 400A Advanced Meat Grading and Evaluation
- ASCI 400B Advanced Livestock Evaluation and Judging

**Internships, Extension, Research or Teaching**
- ASCI 395A Experiential Learning for Career Development in Animal Sciences - Industry Experiences
- ASCI 395B Extension and Service Experiences
- ASCI 395D Research Experiences
- ASCI 395E Experiential Learning for Career Development in Animal Sciences - Undergraduate Teaching Experience
- ASCI 419 Meat Investigations
- ASCI 490A Animal Science Internship - Beef Feedlot Management
- ASCI 499H Honors Thesis
- GRAS 490 Internship Experience in Grazing Livestock Systems

Business Courses: Select 3 courses from the business course list.  
Free Electives
Credit Hours Subtotal:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AECN 220</td>
<td>International Agricultural Trade</td>
</tr>
<tr>
<td>AECN 225</td>
<td>Agribusiness Entrepreneurship in Food Products Marketing</td>
</tr>
<tr>
<td>AECN 235</td>
<td>Introduction to Commodity Marketing</td>
</tr>
<tr>
<td>AECN 325</td>
<td>Marketing of Agricultural Commodities</td>
</tr>
<tr>
<td>AECN 336</td>
<td>Grain Merchandising</td>
</tr>
<tr>
<td>AECN 420</td>
<td>International Food and Agricultural Trade</td>
</tr>
<tr>
<td>AECN 425</td>
<td>Agricultural Marketing in a Multinational Environment</td>
</tr>
<tr>
<td>AECN 435</td>
<td>Advanced Agricultural Marketing Management</td>
</tr>
<tr>
<td>AECN 436</td>
<td>Commodity Price Forecasting</td>
</tr>
<tr>
<td>ENTR 388</td>
<td>Business Systems in Entrepreneurship</td>
</tr>
<tr>
<td>MKT 300</td>
<td>Contemporary Marketing</td>
</tr>
<tr>
<td>MKT 341</td>
<td>Marketing</td>
</tr>
<tr>
<td>MKT 345</td>
<td>Market Research</td>
</tr>
<tr>
<td>MKT 346</td>
<td>Marketing Channels Management</td>
</tr>
<tr>
<td>MKT 347</td>
<td>Marketing Communication Strategy</td>
</tr>
<tr>
<td>MKT 350</td>
<td>Marketing Analytics</td>
</tr>
<tr>
<td>MKT 425</td>
<td>Retailing Management</td>
</tr>
</tbody>
</table>

1. CHEM 105A/105L and CHEM 106A/106L do not provide adequate preparation for advanced chemistry or graduate school within the life sciences. If you desire this advanced training, you are strongly encouraged to take CHEM 109A/109L and CHEM 110A/110L. Many graduate programs also require organic chemistry. CHEM 251 and CHEM 253 are recommended.

2. Must complete a minimum of 4 credits associated with Hands-on Skills and/or On-site Industry Exposure.

3. Credit granted only for those who compete on traveling UNL teams; junior college judging credit NOT accepted. Limited to 2 credits.

4. Pre-experience learning plan must be completed and approved BEFORE experience begins. Internship credit will NOT be awarded for internships or work experience previously completed. An oral or poster presentation is required.

---

**Additional Major Requirements**

**Business Courses for all ASCI options:**

**Finance:**
- ACCT 200 Accounting for Business Decisions
- AECN 275 Agribusiness Entrepreneurial Finance
- AECN 301 Farm Accounting, Analysis, and Tax Management

---

**Law:**
- AECN 256 Legal Aspects in Agriculture
- AECN 345 Policy Issues in Agriculture and Natural Resources
- AECN 357 Natural Resource and Environmental Law
- AECN 445 Agricultural and Natural Resource Policy Analysis
- AECN 456 Environmental Law
Requirements for Minor Offered By Department

Animal Science Minor (18 credits)

Requirements for Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC 100</td>
<td>Fundamentals of Animal Biology and Industry</td>
<td>3</td>
</tr>
<tr>
<td>ASC 240</td>
<td>Anatomy and Physiology of Domestic Animals</td>
<td>4</td>
</tr>
</tbody>
</table>

Select 3 hours from the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC 250A</td>
<td>Basic Beef Cow-Calf Management</td>
</tr>
<tr>
<td>ASC 250B</td>
<td>Basic Beef Stocker and Feedlot Management</td>
</tr>
<tr>
<td>ASC 250K</td>
<td>Basic Swine Management</td>
</tr>
<tr>
<td>ASC 250M</td>
<td>Basic Dairy Management</td>
</tr>
<tr>
<td>ASC 250P</td>
<td>Basic Poultry Management</td>
</tr>
<tr>
<td>ASC 250R</td>
<td>Basic Small Ruminant Management</td>
</tr>
<tr>
<td>ASC 251A</td>
<td>Basic Companion Animal Management - Dog</td>
</tr>
<tr>
<td>ASC 251B</td>
<td>Basic Companion Animal Management - Cat</td>
</tr>
<tr>
<td>ASC 251E</td>
<td>Basic Companion Animal Management - Small Mammals</td>
</tr>
<tr>
<td>ASC 251J</td>
<td>Basic Companion Animal Management - Non-Domesticated/Specialty</td>
</tr>
<tr>
<td>ASC 252A</td>
<td>Introduction to the Horse Industry and Management</td>
</tr>
<tr>
<td>ASC 252B</td>
<td>Basic Equine Management</td>
</tr>
<tr>
<td>ASC 254</td>
<td>Basic Swine Science 1</td>
</tr>
</tbody>
</table>

Select one additional 200-level course from the following: 2-3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC 200</td>
<td>Animal and Carcass Evaluation</td>
</tr>
<tr>
<td>ASC 210</td>
<td>Principles of Animal Products for Today's Society</td>
</tr>
<tr>
<td>ASC 213</td>
<td>Meat Specifications and Procurement</td>
</tr>
<tr>
<td>ASC 260</td>
<td>Basic Equitation</td>
</tr>
<tr>
<td>ASC 270</td>
<td>Fundamentals of Animal Behavior and Welfare</td>
</tr>
</tbody>
</table>

Select 5-7 hours of 300/400 level ASCI courses 1 5-7

Two (2) hours from Animal Science (ASCI) experiential learning courses may be used.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC 310</td>
<td>Fresh Meats</td>
</tr>
<tr>
<td>ASC 321</td>
<td>Companion Animal Nutrition</td>
</tr>
<tr>
<td>ASC 322</td>
<td>Equine Nutrition</td>
</tr>
<tr>
<td>ASC 342</td>
<td>Equine Reproduction</td>
</tr>
<tr>
<td>ASC 354A</td>
<td>Swine Breeding &amp; Gestation</td>
</tr>
<tr>
<td>ASC 354B</td>
<td>Swine Farrowing Management</td>
</tr>
<tr>
<td>ASC 354D</td>
<td>Swine Nursery Management</td>
</tr>
<tr>
<td>ASC 354E</td>
<td>Employee Management for Swine Industry</td>
</tr>
<tr>
<td>ASC 354F</td>
<td>Swine Environment Management</td>
</tr>
<tr>
<td>ASC 370</td>
<td>Animal Welfare</td>
</tr>
</tbody>
</table>

ASCI 422 Advanced Feeding and Feed Formulation Credit Hours Subtotal: 18
Total Credit Hours 18

1 Available online courses for those wishing to complete the minor online.
2 Independent study courses, ASCI 399 and ASCI 496 are excluded.

Animal Science Minor (12 credits)

Twelve (12) credits of ASCI courses at the 300 level or above-excluding ASCI 399 Independent Study in Animal Science and ASCI 496 Independent Study in Animal Science.

Companion Animal and Equine Science Minor (18 credits)

The companion animal and equine science minor provides a specialized minor for students looking to work in those areas. This minor would be beneficial to students interested in working with companion animals and horses but with different majors such as veterinary medicine and biomedical sciences, agriculture education, and more.

The courses in the Companion Animal and Equine Science minor will develop the following skills:

1. Apply handling and training skills related to companion animals and/or horses.
2. Develop animal nutrition, growth, reproduction, behavior, and management recommendations related to companion animal and/or equine science.
3. Develop skills to evaluate companion animals and horses.
4. Propose solutions to problems in the companion animal and/or equine science fields.

This minor will be open to any University of Nebraska–Lincoln undergraduate who is not in the Animal Science majors.

Students must complete a minimum of 18 hours in Companion Animal and Equine courses. A minimum of 8 hours should be at the 300-level or above.

NOTE: Some courses have prerequisites that may not be included in the minor. Students should work with the instructor to determine if they are prepared to take courses without the prerequisites or if they need to choose a different course option.

Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 171</td>
<td>Human-Companion Animal Interactions</td>
</tr>
<tr>
<td>or ASCI 260</td>
<td>Basic Equitation</td>
</tr>
<tr>
<td>ASCI 271</td>
<td>Companion Animal and Equine Behavior</td>
</tr>
</tbody>
</table>

Select 3 credits from the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 251A</td>
<td>Basic Companion Animal Management - Dog</td>
</tr>
<tr>
<td>ASCI 251B</td>
<td>Basic Companion Animal Management - Cat</td>
</tr>
<tr>
<td>ASCI 251E</td>
<td>Basic Companion Animal Management - Small Mammals</td>
</tr>
<tr>
<td>ASCI 251J</td>
<td>Basic Companion Animal Management - Non-Domesticated/Specialty</td>
</tr>
<tr>
<td>ASCI 252A</td>
<td>Introduction to the Horse Industry and Management</td>
</tr>
<tr>
<td>ASCI 252B</td>
<td>Basic Equine Management</td>
</tr>
</tbody>
</table>

AECN 457 Water Law
BLAW 300 Business, Government & Society
BLAW 371 Legal Environment

1 Available online courses for those wishing to complete the minor online.
2 Independent study courses, ASCI 399 and ASCI 496 are excluded.
ASCI 320 Animal Nutrition and Feeding 2-3
or ASCI 321 Companion Animal Nutrition
or ASCI 322 Equine Nutrition

Choose 7-8 additional hours from the following: 7-8
ASCI 202 Exploring Companion Animal Nonprofits and Businesses
ASCI 240 Anatomy and Physiology of Domestic Animals
or ASCI 340 Animal Physiological Systems
ASCI 300E Principles of Horse Evaluation and Judging
ASCI 311A Equine Industry Study Tour
ASCI 342 Equine Reproduction
ASCI 360 Advanced Equitation
ASCI 370 Animal Welfare
ASCI 450 Horse Management
ASCI 399 Independent Study in Animal Science (Exploring Companion Animal Nonprofits and Business)

ASCI 445 Equine and Canine Exercise Science
ASCI 399 Independent Study in Animal Science (Dog Training and Behavior Laboratory)
PSYC 461 Animal Learning & Cognition

Credit Hours Subtotal: 18

**Meat Science Minor (18 credits)**

The primary student learning outcomes for the Meat Science minor are:
1. Develop a comprehensive understanding of evaluation of carcasses, harvest and fabrication techniques, fresh meat quality, meat processing, food safety, and other relevant topics.
2. Explore and evaluate ethical and societal considerations of the meat industry, including environmental impact, animal welfare, and effects on human health.
3. Critically analyze trends and challenges in the meat science field to propose potential solutions.
4. Effectively communicate topics related to the meat science field.

**Meat Science Minor Requirements**

The Meat Science minor will be open to any undergraduate currently enrolled at UNL. Students will work with their academic advisor to declare the Meat Science minor. Students must complete 18 credits from the approved course listing with a minimum of 6 credits being at the 300-level or above. NOTE: Some courses may have prerequisites not included in the minor. Students will need to work with their advisor to make an advanced plan or work with the instructor to determine if they are prepared to take the course.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 200</td>
<td>Animal and Carcass Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>ASCI 210</td>
<td>Principles of Animal Products for Today’s Society</td>
<td>2</td>
</tr>
<tr>
<td>ASCI 310</td>
<td>Fresh Meats</td>
<td>3</td>
</tr>
<tr>
<td>ASCI 410</td>
<td>Processed Meats</td>
<td>3</td>
</tr>
<tr>
<td>Complete 7 credits from the following list:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASCI 300A</td>
<td>Principles of Meat Evaluation, Grading and Judging</td>
<td>7</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 18

**Nebraska Beef Industry Scholars (NBIS) Minor (20-21 credits)**

The Nebraska Beef Industry Scholars minor is designed to develop graduates to become future leaders of the beef industry as they will:

- Understand issues that affect beef production and have the ability to develop solutions to beef industry problems.
- Understand interactions of the animal, plant, and social sciences affecting beef production and management.
- Develop a unique network with leaders of the beef industry.
- Have exceptional oral and written communication skills.
- Have exceptional leadership skills.
- Have outstanding technical knowledge in at least one area of expertise (beef production economics, beef feedlot engineering, live beef animal and carcass evaluation, beef nutrition, beef animal physiology, meat science, genetic improvement of beef cattle, beef products, pre-veterinary animal science, range and forage science, etc.).

The NBIS minor is inherently multidisciplinary and actively engages faculty from animal science, agricultural economics, and agricultural leadership, education and communication (ALEC).

**NBIS Minor Requirements**

A minimum cumulative GPA of 3.0 for all minor related coursework must be obtained in order to complete the minor.

**Total Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 181</td>
<td>Beef Industry Scholars - Freshman Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ASCI 281</td>
<td>Beef Industry Scholars - Issues</td>
<td>1</td>
</tr>
<tr>
<td>AECN 235 /</td>
<td>Introduction to Commodity Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MRKT 235</td>
<td>Agribusiness Entrepreneurship in Food Products</td>
<td></td>
</tr>
<tr>
<td>or AECN 225</td>
<td>EAE 225 / AG 225 / MRKT 225</td>
<td></td>
</tr>
<tr>
<td>ASCI 311E</td>
<td>Beef Industry Study Tour</td>
<td>2</td>
</tr>
<tr>
<td>ALEC 350</td>
<td>Agriculture, the Environment &amp; Science in the Media</td>
<td>3</td>
</tr>
<tr>
<td>or ALEC 207 / ADPR 207</td>
<td>Communicating Science with Public Audiences</td>
<td></td>
</tr>
<tr>
<td>ASCI 381</td>
<td>Beef Industry Scholars - Practicum</td>
<td>1</td>
</tr>
</tbody>
</table>
Animal Science Management Certificate

The courses in the Animal Science Management Undergraduate Certificate program will develop certificate awardees who:

1. Understand the biology and chemistry of the life sciences and apply the principles to animal nutrition, growth, reproduction, genetics and management of animals and their products.
2. Develop animal nutrition, growth, reproduction, genetics, and management recommendations related to the specific animal or animal product in the career paths related to their selected area of interest.
3. Propose solutions to problems in the production and/or management of animals or animal products specific to their area of interest.

This certificate program will be open to degree-seeking students at other two- and four-year institutions, University of Nebraska–Lincoln undergraduates who are not Animal Science majors and associate degree holders. The primary delivery of this program will be online. For current University of Nebraska–Lincoln students (not Animal Science majors) to be accepted into this undergraduate certificate program a student must have at least one semester of college-level biology and one semester of college-level chemistry credit. Courses must meet the University of Nebraska–Lincoln CASNR transfer guidelines to be accepted. Current students wishing to add this certificate to their Nebraska undergraduate degree program, should contact one of the certificate advisors and complete the application form. Upon verification of completion of the prerequisite requirements with the appropriate grade, the department will admit them into the certificate program.

Students must complete 18 credit hours of Animal Science from the required and optional courses listed below. At least 10 credit hours must be completed at the 300 level or higher. Students should complete two credits in an experiential learning project (ASCI 395A, ASCI 395B, or ASCI 395D) in order to complete the certificate.

**Required Courses**

Choose two from the following 100/200 level courses: 6-8 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 100</td>
<td>Fundamentals of Animal Biology and Industry</td>
</tr>
<tr>
<td>ASCI 210</td>
<td>Principles of Animal Products for Today's Society</td>
</tr>
<tr>
<td>ASCI 213</td>
<td>Meat Specifications and Procurement</td>
</tr>
<tr>
<td>ASCI 240</td>
<td>Anatomy and Physiology of Domestic Animals</td>
</tr>
<tr>
<td>ASCI 271</td>
<td>Companion Animal and Equine Behavior</td>
</tr>
</tbody>
</table>

Select up to 3 credits from the following: 3 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 250A</td>
<td>Basic Beef Cow-Calf Management</td>
</tr>
<tr>
<td>ASCI 250B</td>
<td>Basic Beef Stocker and Feedlot Management</td>
</tr>
<tr>
<td>ASCI 250M</td>
<td>Basic Dairy Management</td>
</tr>
<tr>
<td>ASCI 250P</td>
<td>Basic Poultry Management</td>
</tr>
<tr>
<td>ASCI 250R</td>
<td>Basic Small Ruminant Management</td>
</tr>
<tr>
<td>ASCI 251A</td>
<td>Basic Companion Animal Management - Dog</td>
</tr>
<tr>
<td>ASCI 251B</td>
<td>Basic Companion Animal Management - Cat</td>
</tr>
<tr>
<td>ASCI 251E</td>
<td>Basic Companion Animal Management - Small Mammals</td>
</tr>
<tr>
<td>ASCI 251J</td>
<td>Basic Companion Animal Management - Non-Domesticated/Specialty</td>
</tr>
<tr>
<td>ASCI 252A</td>
<td>Introduction to the Horse Industry and Management</td>
</tr>
<tr>
<td>or ASCI 252A</td>
<td>Basic Equine Management</td>
</tr>
</tbody>
</table>

Choose three or four from the following 300/400 level courses: 8-10 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 310</td>
<td>Fresh Meats</td>
</tr>
<tr>
<td>ASCI 321</td>
<td>Companion Animal Nutrition</td>
</tr>
<tr>
<td>ASCI 322</td>
<td>Equine Nutrition</td>
</tr>
<tr>
<td>ASCI 342</td>
<td>Equine Reproduction</td>
</tr>
<tr>
<td>ASCI 370</td>
<td>Animal Welfare</td>
</tr>
<tr>
<td>ASCI 410</td>
<td>Processed Meats</td>
</tr>
<tr>
<td>ASCI 411</td>
<td>HACCP and Food Safety Systems for the Food Industry</td>
</tr>
<tr>
<td>ASCI 421</td>
<td>Advanced Animal Nutrition</td>
</tr>
<tr>
<td>ASCI 422</td>
<td>Advanced Feeding and Feed Formulation</td>
</tr>
<tr>
<td>ASCI 450</td>
<td>Horse Management</td>
</tr>
</tbody>
</table>

Choose one of the following experiential learning courses: 2 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 395A</td>
<td></td>
</tr>
</tbody>
</table>
ASCI 100 Fundamentals of Animal Biology and Industry  
**Description:** Overview of the industries in animal science; fundamentals of animal biology related to their application in those industries; and trends and current issues related to production and consumption of animal products important for human welfare.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Grading Option:** Graded with Option  
**Prerequisite for:** ASCI 100L; ASCI 220; ASCI 251A; ASCI 251B; ASCI 251E; ASCI 251J; ASCI 271  
**Course and Laboratory Fee:** $20

ASCI 100L Fundamentals of Animal Biology and Industry Laboratory  
**Description:** Introductory animal science laboratory designed to introduce basic principles of animal biology and management.  
**Credit Hours:** 1  
**Max credits per semester:** 1  
**Grading Option:** Graded with Option

ASCI 101 Animal Sciences Orientation Seminar  
**Description:** Embrace the importance of an animal science degree in today's industry and in the state of Nebraska. Weekly topics will include discussions with Animal Science faculty, academic success resources, interpersonal and leadership development and academic and co-curricular planning.  
**Credit Hours:** 1  
**Max credits per semester:** 1  
**Grading Option:** Pass No Pass  
**Offered:** FALL

ASCI 120 Animal Biology  
**Description:** Animal science phenomena are utilized to illustrate general biology concepts such as cellular structure and function, metabolism, and energy flow.  
**Credit Hours:** 4  
**Max credits per semester:** 4  
**Grading Option:** Graded with Option  
**Offered:** FALL

ASCI 150 Animal Production Skills  
**Notes:** Some out-of-class responsibilities will be required.  
**Description:** Introductory course in skills related to proper care and management of production animals. Laboratory sessions develop fundamental skills of animal husbandry.  
**Credit Hours:** 2  
**Max credits per semester:** 2  
**Grading Option:** Graded with Option

ASCI 171 Human-Companion Animal Interactions  
**Description:** Roles of companion animals in society (therapy, research, and entertainment). The responsibilities of humans in these relationships.  
**Credit Hours:** 2  
**Max credits per semester:** 2  
**Grading Option:** Graded with Option

ASCI 181 Beef Industry Scholars - Freshman Seminar  
**Notes:** Letter grade only.  
**Description:** Introduction to the Nebraska and United States beef industry. Discussion of issues by invited beef industry leaders and on-site visits of industry organizations.  
**Credit Hours:** 1  
**Max credits per semester:** 1  
**Max credits per degree:** 1  
**Grading Option:** Graded  
**Offered:** SPRING  
**Prerequisite for:** ASCI 281

ASCI 197 Animal Science Skills  
**Description:** Specific hands-on skills important to the animal science industry. Develop skills and training needed for future careers in animal related fields.  
**Credit Hours:** 1-3  
**Min credits per semester:** 1  
**Max credits per semester:** 3  
**Max credits per degree:** 12  
**Grading Option:** Graded with Option

ASCI 200 Animal and Carcass Evaluation  
**Description:** Comparative evaluation of animals and their carcasses and products. Basic animal growth and development and characteristics of beef, pork, lamb, and goat used to determine carcass value. Federal and industry product standards. Introduction to the usage and interpretation of USDA market reports used to determine market value of animals and their products.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Grading Option:** Graded with Option  
**Offered:** FALL  
**Course and Laboratory Fee:** $25
ASCI 201 Professional Development for Careers in Animal Science  
Prerequisites: ASCI 95  
Description: Identify potential careers related to animals and develop career goals and experiential learning plans.  
Credit Hours: 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded  
Offered: SPRING

ASCI 202 Exploring Companion Animal Nonprofits and Businesses  
Description: Explore career options in the companion animal industry with nonprofits or other companion animal businesses.  
Credit Hours: 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded with Option

ASCI 210 Principles of Animal Products for Today's Society  
Notes: ASCI 100 or FDST 101 or FDST 131 recommended  
Description: Learn about edible and inedible products sourced from animals with a particular emphasis on the production of red meat and how animal-sourced products are utilized in today's society. Content will include humane harvest methods, fresh meat quality, further processing, preservation, consumer relations, poultry and egg production, dairy products, use of animal byproducts across industries, and important current topics.  
Credit Hours: 2  
Max credits per semester: 2  
Max credits per degree: 2  
Grading Option: Graded with Option  
Offered: FALL/SPR

ASCI 210L Principles of Animal Products Laboratory  
Prerequisites: Concurrent enrollment or previous credit in ASCI 210  
Description: Learn about edible products sourced from animals with a particular emphasis on red meat. Content covered will include humane harvest, carcass evaluation and fabrication, retail cuts, meat quality research skills, and meat cookery.  
Credit Hours: 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded with Option  
Offered: FALL/SPR  
Course and Laboratory Fee: $50

ASCI 213 Meat Specifications and Procurement  
Crosslisted with: NUTR 213  
Notes: For those students who have an interest in a career in Culinary Science, Meat Science, and/or Dietetics.  
Description: Selecting and purchasing meat for the hotel, restaurant, institutional industry, and the retail markets.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded with Option

ASCI 220 Feeds and Feeding  
Prerequisites: ASCI 100  
Description: Identification and characteristics of feedstuffs and how they can be used to meet nutrient requirements of animals. Discussion of feed processing and impacts on feed quality. Diet formulation and diet assessment overview.  
Credit Hours: 2  
Max credits per semester: 2  
Max credits per degree: 2  
Grading Option: Graded  
Offered: SPRING

ASCI 240 Anatomy and Physiology of Domestic Animals  
Prerequisites: BIOS 101 or LIFE 120 or equivalent; and CHEM 105A and 105L or CHEM 109A and 109L equivalent.  
Description: Fundamentals of the anatomy and physiology of domestic animals.  
Credit Hours: 4  
Max credits per semester: 4  
Max credits per degree: 4  
Grading Option: Graded with Option  
Prerequisite for: ASCI 458

ASCI 243 Fundamental Animal Anatomy Laboratory  
Prerequisites: BIOS 101 and 101L or LIFE 120 and 120L  
Description: Anatomical organization of the nervous, muscle, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems and its role in physiological function and health. Offers hands-on learning experiences through dissections, clinical demonstrations, and interactive multimedia.  
Credit Hours: 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded with Option  
Offered: FALL/SPR

ASCI 250A Basic Beef Cow-Calf Management  
Notes: ASCI 100 recommended.  
Description: Basic principles of life cycle cow-calf management associated with typical production systems to optimize economic and efficient production.  
Credit Hours: 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded with Option  
Offered: SPRING

ASCI 250B Basic Beef Stocker and Feedlot Management  
Notes: ASCI 100 recommended  
Description: Basic principles of post-weaning beef stocker and feedlot management associated with typical production systems to optimize economic and efficient production.  
Credit Hours: 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded with Option  
Offered: SPRING
ASCI 250K Basic Swine Management
Notes: ASCI 100 recommended
Description: Basic principles of life cycle swine management associated with typical production systems to optimize economic and efficient production.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING

ASCI 250M Basic Dairy Management
Notes: ASCI 100 recommended
Description: Basic principles of life cycle dairy management associated with typical production systems to optimize economic and efficient production.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING

ASCI 250P Basic Poultry Management
Notes: ASCI 100 recommended
Description: Basic principles of life cycle poultry management associated with typical production systems to optimize economic and efficient production.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING

ASCI 250R Basic Small Ruminant Management
Notes: ASCI 100 recommended
Description: Basic principles of life cycle small ruminant (sheep and goats) management associated with typical production systems to optimize economic and efficient production.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING

ASCI 251A Basic Companion Animal Management - Dog
Prerequisites: ASCI 100
Description: Management and care of the dog. Explain basic biology, reproduction, and health concerns of the dog. Evaluate management practices related to care of dogs.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: FALL

ASCI 251B Basic Companion Animal Management - Cat
Prerequisites: ASCI 100
Description: Management and care of the cat. Explain basic biology, reproduction, and health concerns of the cat. Evaluate management practices related to care of cats.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: FALL

ASCI 251E Basic Companion Animal Management - Small Mammals
Prerequisites: ASCI 100
Description: Management and care of small mammals. Explain the fundamental aspects of small mammal biology, reproduction, and health considerations, elucidating their connection to overall care.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: FALL

ASCI 251J Basic Companion Animal Management - Non-Domesticated/ Specialty
Prerequisites: ASCI 100
Description: Principles and practices of non-domesticated companion animal (including fish, birds, reptiles, amphibians, and insects) care, including their unique needs, conservation, and ethical considerations.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: FALL

ASCI 252A Introduction to the Horse Industry and Management
Description: Provides an introduction to the equine industry including history and basic biology of the horse, proper care and acceptable management procedures, and current issues. An overview of basic equine anatomy and physiology will be discussed as it relates to managerial principles associated with proper hoof care, disease prevention, breeding and genetics, nutritional management, reproduction, and animal welfare.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL
Prerequisite for: ASCI 271
Course and Laboratory Fee: $25

ASCI 252B Basic Equine Management
Description: Basic equine management will give students an introductory look into the history, anatomy, horse breeds equine anatomy and physiology as it relates to managerial principles associated with proper hoof care, disease prevention, nutritional management, and animal welfare.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: FALL

ASCI 254 Basic Swine Science
Notes: This course is taught by Iowa State University as part of the GPIIDEA/Ag*IDEA course offerings, Registration with permission from your adviser and CASNR Online Education Office.
Description: Basic disciplines and concepts involved in swine production including: industry structure, trends and statistics; production phases and building; genetic improvement; reproduction; nutrition; health and bio-security; nutrient management; marketing and meat quality; and career opportunities in the swine industry.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded
Prerequisite for: ASCI 354J; ASCI 354K; ASCI 354M
ASC 260 Basic Equitation
Prerequisites: Sophomore standing
Description: Study and application of basic equitation principles for the novice rider. Review of fundamental horse safety and horsemanship to include handling, grooming, equipping, riding western or English, and the relationship of riding to physical and mental well-being. Development of balanced seat, hands and posture at all the natural gaits of the horse. Emphasis will be on control of the horse through the use of the primary and secondary aids. Welfare and communication considerations in order to have effective horse-human relationships.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Prerequisite for: ASCI 360
Offered: FALL/SPR
Course and Laboratory Fee: $125

ASC 270 Fundamentals of Animal Behavior and Welfare
Description: Examine various ways humans use and interact with animals in society. Focus on fundamentals of animal behavior, animal welfare principles and issues.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded
Offered: FALL/SPR

ASC 271 Companion Animal and Equine Behavior
Prerequisites: ASCI 100 or ASCI 251 or ASCI 252 or BIOS 101 or LIFE 120
Description: Companion animal and equine behavior. Application of behavior principles to describe normal and problem behaviors of common companion animals and horses.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: SPRING

ASC 281 Beef Industry Scholars - Issues
Prerequisites: ASCI 181
Notes: Letter grade only
Description: Nebraska beef industry and supporting organizations (the Nebraska Cattlemen and the Nebraska Beef Council). Tours, attending meetings, and discussion of issues by invited beef industry leaders.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded
Prerequisite for: ASCI 311E

ASC 300A Principles of Meat Evaluation, Grading and Judging
Description: Comparative evaluation of meat characteristics of beef carcasses, beef primal cuts, pork carcasses, pork primal cuts, and lamb carcasses. Federal grade standards for beef carcass and application of USDA Institutional Meat Purchase Specifications.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: FALL
Prerequisite for: ASCI 400A
Experiential Learning: Fieldwork

ASC 300B Principles of Livestock Evaluation and Judging
Prerequisites: Junior standing. ASCI 200 recommended.
Notes: Opportunity to become members of the University of Nebraska Livestock Judging Team.
Description: Principles of livestock judging and presentation of oral reasons. Evaluation of body structure and composition differences in breeding and market livestock as related to their use in meat production. Live animal, performance records, genetic evaluations, and breeding livestock scenarios evaluated. Presentation of oral reasons to defend selection decisions.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: FALL/SPR
Prerequisite for: ASCI 300D; ASCI 400B
Experiential Learning: Fieldwork

ASC 300D Principles of Meat Animal Evaluation
Prerequisites: ASCI 300B
Notes: The University of Nebraska Meat Animal Evaluation Team will be selected from students in this course.
Description: Further expertise in breeding animal, market animal, and carcass evaluation. Live animal and carcass grading and pricing.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING
Experiential Learning: Fieldwork

ASC 300E Principles of Horse Evaluation and Judging
Notes: Students will have an opportunity to become members of the University of Nebraska Horse Judging Team.
Description: Conformation associated with equine structural form and performance standards. Evaluation of performance classes as governed by breed association standards and industry regulations. Presentation of oral reasons to defend selection decisions.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: SPRING
Experiential Learning: Fieldwork

ASC 300F Principles of Livestock Evaluation and Judging
Notes: Students will have an opportunity to become members of the University of Nebraska Livestock Judging Team.
Description: Principles of livestock judging and presentation of oral reasons. Evaluation of body structure and composition differences in breeding and market livestock as related to their use in meat production. Live animal, performance records, genetic evaluations, and breeding livestock scenarios evaluated. Presentation of oral reasons to defend selection decisions.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: FALL/SPR
Experiential Learning: Fieldwork

ASC 310 Fresh Meats
Prerequisites: ASCI 210
Description: Fresh meat from beef, pork, lamb, and poultry. Characteristics of muscle, meat technology, preservation, merchandising concepts, and markets.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Course and Laboratory Fee: $40
ASCI 311A Equine Industry Study Tour
Description: Provides exposure to the broad array of opportunities in the equine industry and increase the understanding of various disciplines within the horse industry.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: SPRING
Course and Laboratory Fee: $300
Experiential Learning: Fieldwork
ASCI 311B Meat Industry Study Tour
Description: Study tour of livestock and/or meat/food processors. Provide an understanding of the industry's operations and problems.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Course and Laboratory Fee: $200
ASCI 311E Beef Industry Study Tour
Prerequisites: ASCI 281
Notes: Supplements to the class include invited speakers. A summer tour is required. Letter grade only
Description: Identify beef cattle related enterprises that represent the breadth of the cattle industry. Prioritize these enterprises as candidates for inclusion in the summer tour.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded
Offered: SPRING
Prerequisite for: ASCI 381
Experiential Learning: Fieldwork
ASCI 320 Animal Nutrition and Feeding
Prerequisites: ASCI 240 or 340; CHEM 106A and CHEM 106L or CHEM 110A and CHEM 110L.
Description: Fundamentals of nutrition and feeding of domestic livestock, nutrients and nutrient requirements, characteristics of feedstuffs, methods of feeding, and the feed industry.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL/SPR
Prerequisite for: ASCI 321; ASCI 450; ASCI 455; ASCI 457; ASCI 486
ASCI 321 Companion Animal Nutrition
Prerequisites: ASCI 320 or NRES 311; CHEM 106A and 106L or CHEM 110A and 110L.
Description: Digestive anatomy and physiology of companion animals including dogs, cats, small mammals, and exotic species. Unique nutrient requirements, pet food formulation, and regulations.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: SPRING
ASCI 322 Equine Nutrition
Notes: ASCI 320 recommended. Offered in odd numbered calendar years.
Description: Equine nutrition including digestive anatomy and physiology. Nutritional requirements of horses as related to growth, reproduction, and performance. The relationship of nutrition to disease and environment. Management practices and application of current equine nutritional research.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: SPRING
Prerequisite for: ASCI 450
ASCI 330 Animal Breeding and Genetics
Prerequisites: PLAS 215 or BIOS 206; STAT 218.
Description: Principles of animal genetics and genomics, and their application to improvement of livestock and companion animals. Topics include: characterization of allelic and genetic variation associated with animal performance, principles of selection, inbreeding and crossbreeding, advances in molecular genetics, and their applications to the development of breeding programs to enhance animal productivity and well-being.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Graded with Option
Offered: FALL
Prerequisite for: ASCI 455; ASCI 458
Course and Laboratory Fee: $20
ASCI 340 Animal Physiological Systems
Prerequisites: LIFE 121; CHEM 109A and 109L
Description: A comprehensive look at the major physiological systems that comprise the mammalian body. Anatomical organization and functionality of the nervous system, muscle, cardiovascular system, respiratory system, digestive system, urinary system, reproductive system, endocrine system, and immune system.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL
ASCI 341 Physiology and Management of Reproduction
Prerequisites: ASCI 240 or 340
Description: Comparative anatomy and physiology of reproduction in domestic animals. Endocrine regulation of reproductive function, patterns of reproduction, economic consequences of sub-optimal reproductive performance, environmental influences on reproductive efficiency, application of selected techniques for controlling reproduction. Laboratory provides application of techniques used in reproductive management.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Graded with Option
Offered: FALL
Prerequisite for: ASCI 455; ASCI 458
Course and Laboratory Fee: $55
ASCI 342 Equine Reproduction
Prerequisites: ASCI 240 or 340 or BIOS 213.
Notes: ASCI 341 recommended
Description: Anatomy and physiology of stallion and mare reproductive systems. Estrous detection systems, artificial and natural breeding techniques, infertility, semen collection and processing, reproductive management, and record keeping.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: SPRING

ASCI 354A Swine Breeding & Gestation
Notes: This course is taught by North Carolina State University and is part of the GPIDEA/AgIDEA courses offerings. Registration with permission from your advisor and CASNR Online Education.
Description: Concepts related to: reproductive physiology and endocrinology of boars and sows; genetic selection programs; development programs for future replacement gilts and boars; semen collection, evaluation, and preparation; detection of estrus and artificial insemination; pregnancy diagnosis; feeding and house programs for gestating sows; environmental management; records; diseases; and development of quality assurance programs for identifying and solving reproductive problems.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

ASCI 354B Swine Farrowing Management
Notes: This course is taught by the University of Missouri and is part of the GPIDEA/AgIDEA course offerings. Registration with permission from your advisor and CASNR Online Education.
Description: Advanced integration and application of reproductive management concepts during farrowing and lactation. Identification of production trends; formulation of strategies to improve productivity; and parturition and neonatal management.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

ASCI 354D Swine Nursery Management
Notes: This course is taught by Penn State as part of the GPIDEA/Ag IDE A course offerings. Registration with permission from your advisor and CASNR Online Education.
Description: Overview of the critical management, housing, and financial considerations relevant to the successful operation of a swine nursery, grow-finish, or wean to finish enterprise, including: nutrient requirements; building and facility management; and marketing.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

ASCI 354E Employee Management for Swine Industry
Notes: This course is taught by an institutional member of the GPIDEA/AgIDEA consortium. Registration is with permission from your advisor and CASNR Online Education Office.
Description: Effective employee management in swine production units. Assist students in understanding the principles, policies, and practices related to procurement, development, maintenance, and utilization of employees.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

ASCI 354F Swine Environment Management
Notes: This course is taught by Iowa State University as part of the GPIDEA/AgIDEA consortium. Registration is with permission from your advisor and CASNR Online Education Office.
Description: Response of swine to thermal environment, ventilation system design and analysis, heating and cooling systems and examples of various designs for all phases of production. Trouble shooting ventilation systems and energy analysis of production units.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

ASCI 354J Advanced Swine Science
Prerequisites: ASCI 254
Notes: This course is taught by Kansas State University and is part of the GPIDEA/AgIDEA consortium. Registration is with permission from your advisor and CASNR Online Education Office.
Description: An in-depth application of basic concepts covered in Basic Swine Science, focused on the scientific principles to the economical and sustainable production of pork. Detailed analysis of benchmarking, production systems, reproduction, pig flow, ventilation, and herd health are discussed. Become knowledgeable regarding the science, complexity, and technology applied in modern swine production businesses.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option

ASCI 354K Swine Health and Biosecurity
Prerequisites: ASCI 254
Notes: This course is taught by Iowa State University and is part of the GPIDEA/AgIDEA consortium. Registration is with permission from your advisor and CASNR Online Education Office.
Description: Overview of standard biosecurity protocols and identification of behavior and clinical signs of illness in pigs. Treatment administration and prevention methods. Introduction to immune system function and basic swine disease transmission.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
ASCI 354M Marketing and Risk Management in the Swine Industry
Prerequisites: ASCI 254
Notes: This course is taught by North Carolina State University and is part of the GPIDEA/AgIDEA consortium. Registration is with permission from your advisor and CASNR Online Education Office.
Description: Study of marketing and risk management as they relate to the swine industry. Financial risk management, beef marketing, animal health, and related emerging issues.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option

ASCI 360 Advanced Equitation
Prerequisites: Junior standing, ASCI 260 and/or permission.
Description: Study and application of maneuvers basic to performance excellence. Assigned student mounts expected to show satisfactory progress toward standards of excellence in Western and English performance.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Course and Laboratory Fee: $100

ASCI 361 Equestrian Team Horsemanship/Equitation
Notes: May be repeated for a total of 4 credit hours.
Description: Application of equestrian horsemanship and equitation skills through practices and horsemanship competitions in the Intercollegiate Horse Show Association.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 4
Grading Option: Pass No Pass

ASCI 370 Animal Welfare
Prerequisites: Junior standing or permission.
Description: In-depth exploration of the issues involved in animal use. The historical, biological, ethical, and social aspects of human/animal interactions in Western culture.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option

ASCI 381 Beef Industry Scholars - Practicum
Prerequisites: ASCI 311E, ALEC 350
Notes: Letter grade only.
Description: Financial risk management, beef processing, animal health, and related emerging issues.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded
Offered: SPRING
Prerequisite for: ASCI 481

ASCI 391 Networking with Animal Science Industry Professionals
Prerequisites: Junior or Senior standing.
Description: Discussion and reflection of selected current topics significant to agriculture, animals, and animal systems. Concerns and issues of society as they relate to local, national, and international usage of animals.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Pass No Pass
Offered: FALL/SPR

ASCI 395A Experiential Learning for Career Development in Animal Sciences - Industry Experiences
Description: Extension and application of the animal science curriculum within the context of industry (e.g., internship), extension and service, research, or teaching experience.
Credit Hours: 1-6
Min credits per semester: 1
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Graded with Option
Prerequisite for: ASCI 482, AECN 482
Experiential Learning: Internship/Co-op

ASCI 395B Extension and Service Experiences
Description: Extension and application of the animal science curriculum within the context of industry (e.g., internship), extension and service, research, or teaching experience. A faculty adviser for the area of interest must be identified prior to registering for the course.
Credit Hours: 1-6
Min credits per semester: 1
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Graded with Option
Prerequisite for: ASCI 482, AECN 482
Experiential Learning: Internship/Co-op

ASCI 395D Research Experiences
Description: Extension and application of the animal science curriculum within the context of industry (e.g., internship), extension and service, research, or teaching experience. A faculty adviser for the area of interest must be identified prior to registering for the course.
Credit Hours: 1-6
Min credits per semester: 1
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Graded with Option
Prerequisite for: ASCI 482, AECN 482
Experiential Learning: Internship/Co-op

ASCI 395E Experiential Learning for Career Development in Animal Sciences - Undergraduate Teaching Experience
Description: Extension and application of the animal science curriculum within the context of industry (e.g., internship), extension and service, research, or teaching experience.
Credit Hours: 1-6
Min credits per semester: 1
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Graded with Option
Offered: FALL/SPR
Experiential Learning: Student Teaching/Education Practicum
ASCI 399 Independent Study in Animal Science
Prerequisites: Permission.
Description: Individual or group projects in research, literature review, or extension of course work under supervision and evaluation of a departmental faculty member.
Credit Hours: 1-5
Min credits per semester: 1
Max credits per semester: 5
Max credits per degree: 12
Grading Option: Graded with Option
Offered: FALL/SPR

ASCI 400A Advanced Meat Grading and Evaluation
Prerequisites: ASCI 300A
Notes: Must be an active member of the current semester's Meat Judging Team.
Description: Comparative evaluation of the meat characteristics of beef, pork, and lamb that affect product merit and the scientific basis of the factors that influence the relative value. Federal meat grades and their application, industry grading system and their application, and application of Institutional Meat Purchase Specifications. Application of the above topics, as well as critical decision making and written justification of meat product merit, practiced in-depth.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: FALL/SPR

ASCI 400B Advanced Livestock Evaluation and Judging
Prerequisites: ASCI 300B or equivalent experience.
Notes: The University of Nebraska Senior Livestock Judging Team will be selected from students in this course.
Description: Livestock judging and evaluation applying principles learned in ASCI 300B. Field trips to commercial and purebred livestock operations and exhibitions. Network with producers to learn varied livestock production philosophies. Develop a proficiency in brief, concise oral presentation of reasons for making a decision.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option
Offered: FALL/SPR
Course and Laboratory Fee: $100
Experiential Learning: Fieldwork

ASCI 400E Advanced Horse Evaluation and Judging
Prerequisites: Permission
Notes: ASCI 300E recommended. Departmental consent required. The University Horse Judging Team will be selected from students in this course. Field trips are a major component of the course.
Description: Advanced horse judging and analysis. Evaluate conformation and score multiple performance events. The development and presentation of concise oral reasons to defend placing decisions.
Credit Hours: 1-2
Min credits per semester: 1
Max credits per semester: 2
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL
Experiential Learning: Fieldwork

ASCI 410 Processed Meats
Crosslisted with: ASCI 810
Prerequisites: ASCI 210 or FDST 205.
Description: Science and technology of modern meat processing. Utilization of meat, non-meat ingredients, and processing techniques and their impact on processed meat characteristics. Laboratory provides hands-on application with the preparation, development, and evaluation of processed meats products.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: SPRING
Course and Laboratory Fee: $40

ASCI 411 HACCP and Food Safety Systems for the Food Industry
Prerequisites: An understanding of food production and processing operations. Recommended: ASCI 310, 410, and FDST 205; or NUTR 343.
Description: Principles, implementation, sanitation, and standard operating procedures that function to support the Hazard Analysis and Critical Control Point (HACCP) System. Food safety hazards and their relationship to food borne illness in the meat and food industry.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option

ASCI 419 Meat Investigations
Crosslisted with: ASCI 819, FDST 419, FDST 819
Prerequisites: ASCI 210
Description: Conduct independent research and study meat industry problems in processing, production, storage, and preparation of meat and meat products.
Credit Hours: 1-3
Min credits per semester: 1
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option

ASCI 421 Advanced Animal Nutrition
Crosslisted with: ASCI 821
Prerequisites: ASCI 320
Description: Advanced course dealing with the nutrition of domestic animals. In-depth coverage of nutrients, nutrient metabolism, and nutrient requirements. Biochemical and physiological functions of nutrients in life processes.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option

ASCI 422 Advanced Feeding and Feed Formulation
Crosslisted with: ASCI 822
Prerequisites: ASCI 320 or equivalent.
Description: Feeding practices for domestic animals. Applied animal nutrition and feed formulation.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
ASCI 431 Advanced Animal Breeding  
Crosslisted with: ASCI 831  
Prerequisites: ASCI 330  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded with Option

ASCI 432 Genome Analysis  
Crosslisted with: ASCI 832  
Prerequisites: PLAS 215 and BIOC 401 or equivalent  
Description: Theoretical and practical aspects of: structure and function of eukaryotic genomes; genome sequencing and assembling, polymorphism and isoform detection and genotyping; gene and genome annotation; strategies used to identify genetic variants responsible for phenotypic differences; and personalized genomics, social and ethical aspects associated with genomic information.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded  
Offered: SPRING

ASCI 441 New Techniques in Reproductive Biology  
Crosslisted with: ASCI 841  
Prerequisites: ASCI 341 or equivalent.  
Description: Mammalian early embryonic development. Basic aspects of embryology and development biology. Modern technologies in animal reproductive biology, in vitro maturation and fertilization, embryo transfer, cloning, assisted reproductive technologies, transgenic animals, and embryonic stem cells.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded with Option  
Course and Laboratory Fee: $100

ASCI 442 Endocrinology  
Crosslisted with: ASCI 842, BIOS 442, BIOS 842, VBMS 842  
Prerequisites: A course in vertebrate physiology and/or biochemistry.  
Description: Mammalian endocrine glands from the standpoint of their structure, their physiological function in relation to the organism, the chemical nature and mechanisms of action of their secretory products, and the nature of anomalies manifested with their dysfunction.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded with Option

ASCI 443 Physiology of Animal Cells and Tissues  
Crosslisted with: ASCI 843  
Prerequisites: ASCI 240 or ASCI 340 or BIOS 213  
Description: Molecular, cellular, and tissue dependent functions of neurons, skeletal and smooth muscle, vasculature, and immune cells. Cellular regulation of important physiological processes including blood flow, gas exchange, inorganic solute homeostasis, acid-base balance, water balance, appetite control, and thermal regulation will also be studied. Understand cellular and molecular processes that ensure homeostasis and promote integration of physiological systems.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded  
Offered: SPRING

ASCI 444 Domestic Animal Immunology  
Crosslisted with: ASCI 844  
Prerequisites: LIFE 120; LIFE 121; ASCI 240 or BIOS 213 or ASCI 340  
Description: Learn the fundamental knowledge of the animal immune system, and how to utilize immunology to improve animal health and production. Become familiar with common immunoassays, immunological diseases and immunotherapy.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded  
Offered: FALL  
Groups: Biology, Psychology & Politics

ASCI 445 Equine and Canine Exercise Science  
Prerequisites: ASCI 240 or ASCI 340  
Description: Physiological adaptations to athletic training in equine and canine athletes. Topics of emphasis include exercise-related adaptations in metabolism, locomotion, the cardiovascular system, musculoskeletal system, and endocrine system. The roles of nutrition and conditioning programs on exercise.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded  
Offered: FALL

ASCI 450 Horse Management  
Prerequisites: ASCI 320 or 322  
Notes: ASCI 341 or 342 recommended  
Description: Light horse production. Nutrition, reproduction, management, housing, and principle usage of light horses.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded with Option  
Offered: FALL  
ACE: ACE 10 Integrated Product
ASCi 451 Livestock Management on Range and Pasture
Crosslisted with: PLAS 445, AGRO 845, ASCi 851, RNGE 445, GRAS 445
Prerequisites: ASCi 250 and PLAS 240 or PLAS 340
Notes: AECN 201 recommended. Capstone course. All students required to participate in a one-week field trip in central or western Nebraska prior to beginning of fall semester. Therefore, students must notify instructor at time of early registration (Dates are given in class schedule.)
Description: Analyzing the plant and animal resources and economic aspects of pasturage. Management of pasture and range for continued high production emphasized.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL
ACE: ACE 10 Integrated Product
Course and Laboratory Fee: $300

ASCi 455 Beef Cow-Calf Management
Prerequisites: Senior standing or permission; ASCi 320; ASCi 330 or 341
Description: Integrated management specific to the beef cow-calf enterprise necessary to achieve biologic and economic efficiency.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: SPRING
ACE: ACE 10 Integrated Product

ASCi 456 Beef Cattle Merchandising
Prerequisites: Senior standing. ASCi 300B and 330 recommended.
Notes: Students are responsible for planning and conducting the annual UNL bull sale.
Description: Develop skills to merchandise breeding cattle including advertising, genetic and phenotype selection, data collection, and conducting a bull sale.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option
Offered: SPRING
ACE: ACE 10 Integrated Product

ASCi 457 Beef Feedlot Management
Prerequisites: Senior standing or permission; ASCi 320
Description: Advanced preparation in the feeding of cattle for slaughter. Emphasis on the nutrition and management of feedlot cattle and related health and economic considerations. Covers the beef enterprise from weaning to market and relates closely to beef cow-calf production.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL
ACE: ACE 10 Integrated Product

ASCi 458 Advanced Companion Animal Biology
Prerequisites: ASCi 220, ASCi 330 or ASCi 341
Description: Advanced companion and specialty animal management techniques. Assess and propose solutions to management and well-being concerns related to health care, nutrition, and behavior of companion animals.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: SPRING
ACE: ACE 10 Integrated Product

ASCi 481 Beef Industry Scholars - Beef Summit
Prerequisites: ASCi 381
Notes: Requires working with the Nebraska Cattlemen and the instructor to develop the summit. Letter grade only.
Description: Identification of a major issue confronting the Nebraska beef industry. Organize a Nebraska summit meeting to discuss and bring the identified issue to resolution.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded
Offered: FALL
Prerequisite for: ASCi 482, AECN 482

ASCi 482 Beef Industry Scholars - National Beef Industry Policy
Crosslisted with: AECN 482
Prerequisites: ASCi 481; ASCi 395A or ASCi 395B or GRAS 490 or AECN 495C
Notes: Requires attending the National Cattlemen’s Beef Association (NCBA) annual convention and then, communicating the new policy and issues to local organizations and undergraduate student groups. Letter grade only.
Description: Discuss and dissect issues from the NCBA convention researching the pros and cons of current and proposed policy.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded
Offered: SPRING

Experiential Learning: Fieldwork

ASCi 485 Animal Systems Analysis
Prerequisites: Junior or Senior standing or permission
Notes: For majors in the College of Agricultural Sciences and Natural Resources with an interest in careers in livestock production units, the meat industry, or related agribusiness.
Description: Goal setting, information gathering, and application of problem solving methods in animal science. Develops ability to analyze and solve problems in all segments of animal science by integration of information from all pertinent disciplines and sources.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL/SPR
ACE: ACE 10 Integrated Product
ASCI 486 Animal Biological Systems
Prerequisites: Junior or Senior standing; ASCI 240 or 340; ASCI 320; AGRO 215 or BIOS 206
Notes: Capstone course. For seniors with an interest in careers involving animal science disciplines, animal biology, and related fields.
Description: How to integrate information from the animal science disciplines to understanding animals as biological systems. The processes of growth, adaptation, and lactation. Analyzing the interrelationship of each discipline within animal production. Using case studies, scenarios, and problem solving assignments to examine how alterations in nutrition and metabolism, genetic makeup, endocrine profile and/or the environment impact or effect the animal as a whole.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option
Offered: FALL
ACE: ACE 10 Integrated Product

ASCI 490A Animal Science Internship - Beef Feedlot Management
Prerequisites: Acceptance into the Beef Feedlot Management Program.
Description: Management internship in a beef feedlot. Organizational and financial structure of the beef feedlot and experience in making decisions related to: animal production, marketing, business management, and personnel management.
Credit Hours: 1-3
Min credits per semester: 1
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded with Option

ASCI 496 Independent Study in Animal Science
Crosslisted with: ASCI 896
Prerequisites: 12 hrs animal science or closely related areas and permission.
Description: Individual or group projects in research, literature review, or extension of course work under the supervision and evaluation of a departmental faculty member.
Credit Hours: 1-5
Min credits per semester: 1
Max credits per semester: 5
Max credits per degree: 12
Grading Option: Graded with Option

ASCI 499H Honors Thesis
Prerequisites: Admission to the University Honors Program and permission; AGRI 299H recommended.
Description: Conduct a scholarly research project and write a University Honors Program or undergraduate thesis.
Credit Hours: 3-6
Min credits per semester: 3
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Graded

Career Information
The following represents a sample of the internships, jobs and graduate school programs that current students and recent graduates have reported.

Jobs of Recent Graduates
- Nutritionist, Dekalb Feeds - Ely, IA
- Pet Care Technician Manager, Nebraska Animal Medical Center - Lincoln, NE
- 4-H Extension Assistant, Nebraska Extension - Omaha, NE
- Operations Management Associate, Cargill Meat Solutions - Schuyler, NE
- Animal Behaviorist, Capital Humane Society - Lincoln, NE
- Horse Trainer and Riding Instructor, Self-Employed - Lincoln, NE
- Cattle Health Assistant, Adams Land and Cattle Co. - Broken Bow, NE
- Farm Manager, Rock Creek Swine - Nebraska City, NE
- Animal Protein Manager, Cargill - Wichita, KS
- Herdsman/Cattle Manager, Rippe Gelbviah - Hubbell, NE

Internships
- Beef Sales Intern, Cargill Meat Solutions - Witchita, KS
- Kentucky Equine Management Internship, Adena Springs - Paris, KY
- Intern, Henry Doorly Zoo - Omaha, NE
- Feedlot Intern, Rhea Cattle Co. - Arlington, NE
- Clydesdale Handler Intern, Anheuser-Busch - St. Louis, MO
- Animal Welfare Intern, Nebraska Humane Society - Omaha NE
- Communications and Marketing Intern, American Hereford Association - Blue Rapids, KS
- Feedlot Intern, U.S. Meat Animal Research Center - Clay Center, NE
- Animal Care Intern, Willowbrook Wildlife Center - Glen Ellyn, IL
- Equine Racetrack Practitioner Intern, Arapahoe Park Racetrack - Aurora, CO

Graduate & Professional Schools
- Ruminant Nutrition, University of Nebraska-Lincoln - Lincoln, NE
- Professional Program of Veterinary Medicine, University of Nebraska-Lincoln - Lincoln, NE
- Animal Biology, University of California-Davis - Davis, CA
- Master's of Conservation Medicine, Tufts University - Medford, MA
- Range Management Program, Texas Christian University - Fort Worth, TX
- Animal Breeding and Genetics, University of Nebraska-Lincoln - Lincoln, NE
- Animal Science, Physiology, University of Nebraska - Lincoln, NE
- Master's of Science in Leadership Education: Leadership Development Emphasis, University of Nebraska-Lincoln - Lincoln, NE
- Master's of Agriculture Economics, Oklahoma State - Stillwater, OK
- Poultry Nutrition, University of Nebraska - Lincoln, NE