



# ANIMAL SCIENCE (ASCI)

## ASCI 42 Animal Science Professional Development Experience

**Prerequisites:** Permission

**Description:** Cooperative education in an established or organized international or professional development experience program in Animal Science.

**Credit Hours:** 0

**Max credits per semester:**

**Max credits per degree:**

**Grading Option:** Pass No Pass

## 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

**Max credits per degree:** 3

**Grading Option:** Graded with Option

**Prerequisite for:** ASCI 100L; ASCI 202; ASCI 220

**Course and Laboratory Fee:** \$20

## ASCI 100L Fundamentals of Animal Biology and Industry Laboratory

**Prerequisites:** Previous or concurrent enrollment in ASCI 100

**Description:** Introductory animal science laboratory designed to introduce basic principles of animal biology and management.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 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

**Max credits per degree:** 1

**Grading Option:** Pass No Pass

**Offered:** FALL

**Prerequisite for:** ASCI 201

## 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

**Max credits per degree:** 4

**Grading Option:** Graded with Option

**Offered:** FALL

**Prerequisite for:** ASCI 240; ASCI 243

**ACE:** ACE 4 Science

## 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

**Max credits per degree:** 2

**Grading Option:** Graded with Option

**Offered:** SPRING

**Course and Laboratory Fee:** \$30

**Experiential Learning:** Fieldwork

## 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

**Max credits per degree:** 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 101 or PVET 101**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****Prerequisites:** ASCI 101 or PVET 101 or NRES 101**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**Offered:** SPRING**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**Prerequisite for:** ASCI 210L; ASCI 310**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:** \$15**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**Prerequisite for:** ASCI 320; ASCI 321; ASCI 458**ASCI 240 Physiology of Domestic Animals****Prerequisites:** BIOS 101 or LIFE 120 or ASCI 120; CHEM 105A and 105L or CHEM 109A and 109L; Previous or concurrent enrollment in ASCI 243.**Description:** Physiology of animals in relation to their essential life processes, including maintenance, growth, nutrition, lactation, reproduction, and stress management**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded with Option**Offered:** SPRING**Prerequisite for:** ASCI 341; ASCI 342; ASCI 445; NUTR 450; NUTR 455; VBMS 303; VBMS 410**ASCI 243 Fundamental Animal Anatomy Laboratory****Prerequisites:** ASCI 120 or 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**Prerequisite for:** ASCI 240**Course and Laboratory Fee:** \$50**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**

**Notes:** ASCI 100 recommended

**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**

**Notes:** ASCI 100 recommended

**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**

**Notes:** ASCI 100 recommended

**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**

**Notes:** ASCI 100 recommended

**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

**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 GPIDEA/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

**ASCI 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**Course and Laboratory Fee:** \$125**ASCI 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**Prerequisite for:** ASCI 271; ASCI 370**ASCI 271 Companion Animal and Equine Behavior****Prerequisites:** ASCI 270 or LIFE 121**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**ASCI 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**ASCI 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**ASCI 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**ASCI 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**ASCI 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**ASCI 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:** \$325

**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**

**Prerequisites:** CHEM 106A or CHEM 110A and ASCI 220

**Description:** Fundamentals of nutrition and feeding of domestic livestock, digestive anatomy, physiology and metabolism, nutrients and nutrient requirements, evaluation of diet formulations and methods of feeding.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded with Option

**Offered:** SPRING

**Prerequisite for:** ASCI 321; ASCI 450; ASCI 455; ASCI 457

**ASCI 321 Companion Animal Nutrition**

**Prerequisites:** ASCI 220 or ASCI 320 or NRES 311; CHEM 106A or CHEM 110A.

**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

**Prerequisite for:** ASCI 450

**ASCI 330 Animal Breeding and Genetics**

**Prerequisites:** PLAS 215 or BIOS 201; 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 and 121L; CHEM 110A and 110L

**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:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Grading Option:** Graded with Option

**Offered:** FALL

**Prerequisite for:** ASCI 341; ASCI 445; VBMS 410

**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:** \$80

**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 Office.**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/AgIDEA course offerings. Registration with permission from your advisor and CASNR Online Education Office.**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 with permission from your adviser 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:** Describe industry structure, markets, and risk that characterize the US swine sector. Review futures and options markets and contracts and their usage to manage risks in US swine production.**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:** ASCI 270**Description:** Explore the origins of human responsibility to animals in domestication, and the historical, biological, ethical and social aspects of human-animal interaction in Western Culture.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded with Option**Offered:** SPRING**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**Experiential Learning:** Research**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**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:** 2**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**ACE:** ACE 10 Integrated Product**Course and Laboratory Fee:** \$80**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.**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**Prerequisite for:** ASCI 925, NUTR 925; ASCI 926, NUTR 926; ASCI 927, NUTR 927**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**Description:** Application of genetic principles to animal breeding. Critical examination of current and potential selection programs and crossbreeding systems. Determination of performance objectives. Expected responses to selection methods and dissemination of improvement in an industry.**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 Seedstock Production and Sales****Prerequisites:** Senior standing.**Notes:** ASCI 330 recommended. Students are responsible for planning and conducting the annual UNL bull sale.**Description:** Learn applied beef cattle genetics principles as they apply to marketing and selecting beef bulls. Supplemented with invited industry speakers to illustrate how these concepts are applied in practice and how different entities approach marketing seedstock. Learn of data collection required to evaluate bulls and how to construct a sale catalog and conduct a bull sale.**Credit Hours:** 2**Max credits per semester:** 2**Max credits per degree:** 2**Grading Option:** Graded with Option**Offered:** SPRING**Experiential Learning:** Fieldwork**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 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