

# ANIMAL SCIENCE (ASCI)

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## ASCI 95 Animal Science Major Orientation Seminar

**Prerequisites:** Animal Science Major

**Description:** The Animal Science Major Orientation Seminar provides Animal Science majors an opportunity to interact with Animal Science Faculty and other Animal Science students in an encouraging and supportive environment during their first semester in the major. Weekly topics will include discussions with Animal Science faculty, academic success resources, intrapersonal and leadership development and academic and co-curricular planning. The course is required for all Animal Science majors regardless of when the major is declared.

**Credit Hours:** 0

**Max credits per semester:**

**Max credits per degree:**

**Format:** LEC

**Prerequisite for:** ASCI 201

**Groups:** Introductory

## 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

**Format:** LEC

**Prerequisite for:** ASCI 100L; ASCI 210; ASCI 271

## 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

**Format:** LAB

## ASCI 107 Introduction to the Companion Animal Food Industry

**Crosslisted with:** FDST 107

**Description:** The companion animal food industry, products, processes, and career opportunities.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Format:** LEC

## ASCI 150 Animal Production Skills

**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

**Format:** LEC

## ASCI 151 Introductory Companion Animal Biology

**Description:** Domestication, anatomy, care, nutrition, reproduction and welfare of dogs, cats, rabbits, and other companion animals.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

## 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

**Format:** LEC

## 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

**Format:** LEC

**Offered:** SPRING

**Prerequisite for:** ASCI 281

## ASCI 200 Animal and Carcass Evaluation

**Prerequisites:** Sophomore standing.

**Description:** Comparative evaluation of animals and their carcasses and products. Basic animal growth and development and the characteristics of beef, pork, lamb, and poultry that determine carcass value. Federal and industry product standards. Introduction of economic selection objectives, measurements of animal performance, use of performance records to estimate genetic value and application of procedures of genetic evaluation.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

## 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

**Format:** LEC

**Offered:** SPRING

### **ASCI 210 Animal Products**

**Prerequisites:** ASCI 100

**Description:** Knowledge of edible animal products with particular emphasis to meat products from livestock and poultry. Includes all aspects of the meat industry from slaughter to consumption. Methods of slaughter and fabrication, conversion of muscle to meat, processing techniques, preservation and storage, and consumer related topics discussed and demonstrated.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

**Prerequisite for:** ASCI 310; ASCI 343, NUTR 343

### **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

**Format:** LEC

**Prerequisite for:** ASCI 343, NUTR 343

### **ASCI 240 Anatomy and Physiology of Domestic Animals**

**Prerequisites:** BIOS 101 or LIFE 120 or equivalent; and CHEM 105 or CHEM 109 or equivalent.

**Description:** Fundamentals of the anatomy and physiology of domestic animals.

**Credit Hours:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Format:** LEC

**Prerequisite for:** ASCI 315; ASCI 320; ASCI 341; ASCI 342; ASCI 486; NUTR 450; NUTR 455; VBMS 303; VBMS 410

### **ASCI 250 Animal Management**

**Prerequisites:** Sophomore standing.

**Description:** Principles of managing animals in typical production systems. Basics of managing beef, dairy, horses, poultry, sheep, and swine through the life cycle for economic and efficient production.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

**Prerequisite for:** AGRO 445, AGRO 845, ASCI 451, ASCI 851, RNGE 445; ASCI 250; ASCI 453, ASCI 453H

### **ASCI 251 Introduction to Companion Animals**

**Description:** Overview of pets, their care, nutrition, reproduction behavior, and health issues; exploration of other ways in which these animals can be used (e.g., in therapy, teaching).

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

**Offered:** FALL

**Prerequisite for:** ASCI 271

### **ASCI 252 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

**Format:** LEC

### **ASCI 254 Basic Swine Science**

**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. 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.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Format:** LEC

**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

**Format:** LEC

**Prerequisite for:** ASCI 360

### **ASCI 271 Companion Animal Behavior**

**Prerequisites:** ASCI 100 or ASCI 251 or BIOS 101 or LIFE 120

**Description:** Companion animal behavior. Application of behavior principles to describe normal and problem behaviors of common companion animals.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

**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**Format:** LEC**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:** 1**Max credits per semester:** 1**Max credits per degree:** 1**Format:** LEC**Offered:** SPRING**Prerequisite for:** ASCI 400A**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**Format:** LEC**Prerequisite for:** ASCI 300D; ASCI 400B**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**Format:** LAB**ASCI 300E Principles of Horse Evaluation and Judging****Prerequisites:** Junior standing recommended.**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**Format:** LAB**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**Format:** LEC**Prerequisite for:** ASCI 343, NUTR 343**ASCI 311A Equine 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**Format:** LEC**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**Format:** LEC**ASCI 311D Pork 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**Format:** LEC**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**Format:** LEC**Prerequisite for:** ASCI 381**ASCI 315 Animal Growth and Development****Prerequisites:** ASCI 240 or 340**Description:** Provide insight into the growth and development of the structural tissues in animals. The physiological, genetic, nutritional, and environmental factors that can affect growth and development of animals will be discussed in terms of both livestock and domestic animals.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Format:** LEC

**ASCI 320 Animal Nutrition and Feeding**

**Prerequisites:** ASCI 240 or 340 or equivalent, CHEM 106 or 251 or equivalent.

**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

**Format:** LEC

**Prerequisite for:** ASCI 321; ASCI 450; ASCI 455; ASCI 457; ASCI 486

**ASCI 321 Companion Animal Nutrition**

**Prerequisites:** ASCI 320 or equivalent.

**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

**Format:** LEC

**ASCI 322 Equine Nutrition**

**Notes:** ASCI 320 recommended.

**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

**Format:** LEC

**ASCI 330 Animal Breeding and Genetics**

**Prerequisites:** AGRO 215 or BIOS 206; STAT 218 or MATH 106 or equivalent.

**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

**Format:** LEC

**Offered:** FALL

**Prerequisite for:** ASCI 455

**ASCI 340 Animal Physiological Systems**

**Prerequisites:** LIFE 121; CHEM 110; MATH 102, 103, 104, or MATH 106.

**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. Labs offer hands-on learning experiences through dissections, clinical demonstrations, and interactive multimedia.

**Credit Hours:** 4

**Max credits per semester:** 4

**Max credits per degree:** 4

**Format:** LEC

**Offered:** FALL

**Prerequisite for:** ASCI 315; ASCI 320; ASCI 341; ASCI 486; VBMS 303; VBMS 403; 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

**Format:** LEC

**Offered:** FALL

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

**ASCI 342 Equine Reproduction**

**Prerequisites:** ASCI 240 or equivalent. 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

**Format:** LEC

**ASCI 343 Meat CulinologyTMIII: Foodservice Applications**

**Crosslisted with:** NUTR 343

**Prerequisites:** ASCI/NUTR 210 or ASCI/NUTR 213 or ASCI/NUTR 310.

**Description:** Cookery principles and methods role in maintaining meat yield and quality characteristics. Cookery techniques to maximize guest satisfaction and insure foodservice and/or restaurant financial integrity. Flavor enhancement and cookery technology application in center of the plate concept development.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Format:** LEC

**ASCI 354A Swine Breeding & Gestation**

**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. 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.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Format:** LEC

**ASCI 354B Swine Farrowing Management**

**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. 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.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Format:** LEC

**ASCI 354D Swine Nursery Management**

**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. This course is taught by Penn State as part of the GPIDEA/Ag\*IDEA course offerings. Registration with permission from your advisor and CASNR Online Education Office.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Format:** LEC

**ASCI 354E Employee Management for Swine Industry**

**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. This course is taught by Virginia Tech University and is part of the GPIDEA/AgIDEA consortium. Registration is with permission from your advisor and CASNR Online Education Office.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Format:** LEC

**ASCI 354F Swine Environment Management**

**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. This course is taught by Iowa State University as part of the GPIDEA/AgIDEA consortium. Registration with permission from your advisor and CASNR Online Education Office.

**Credit Hours:** 1

**Max credits per semester:** 1

**Max credits per degree:** 1

**Format:** LEC

**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

**Format:** LEC

**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

**Format:** LEC

**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

**Format:** LEC

**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

**Format:** LEC

**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

**Format:** LAB

**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

**Format:** LEC

**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

**Format:** LEC

**Offered:** SPRING

**Prerequisite for:** ASCI 481

**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

**Format:** FLD

**Prerequisite for:** ASCI 482, AECN 482

**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

**Format:** FLD

**Prerequisite for:** ASCI 482, AECN 482

**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

**Format:** IND

**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

**Format:** IND

**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

**Format:** IND

**ASCI 400A Advanced Meat Grading and Evaluation**

**Prerequisites:** ASCI 300A

**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:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Format:** LEC

**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**Format:** LAB**ASCI 400E Advanced Horse Evaluation and Judging****Prerequisites:** ASCI 300E or equivalent, recommended.**Notes:** 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:** 2**Max credits per semester:** 2**Max credits per degree:** 2**Format:** LAB**ASCI 410 Processed Meats****Crosslisted with:** ASCI 810**Prerequisites:** ASCI 210 or equivalent. Junior standing.**Notes:** 3 cr II classroom. 3 cr I, II, III web.**Description:** Modern meat processing industry and its use of science and technology. The fabrication, processing, preservation, sanitation, food safety, ethnic evolution, and utilization of manufactured and processed meat. Actual laboratory preparation of processed meats and by-products of the meat packing industry.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Format:** LEC**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**Format:** LEC**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**Format:** LEC**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**Format:** LEC**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**Format:** LEC**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**Format:** LEC**ASCI 432 Genome Analysis****Crosslisted with:** ASCI 832**Prerequisites:** AGRO 215 and BIOC 321 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**Format:** LEC**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**Format:** LEC

**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**Format:** LEC**ASCI 443 Physiology of Animal Cells and Tissues****Crosslisted with:** ASCI 843**Prerequisites:** LIFE 121; ASCI 240 or ASCI 340 or BIOS 213; BIOC 321 or BIOC 431**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**Format:** LEC**Offered:** SPRING**ASCI 450 Horse Management****Prerequisites:** Senior standing or permission; ASCI 320; ASCI 341**Notes:** ASCI 330 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**Format:** LEC**Offered:** FALL**ACE:** ACE 10 Integrated Product**ASCI 451 Livestock Management on Range and Pasture****Crosslisted with:** AGRO 445, AGRO 845, ASCI 851, RNGE 445**Prerequisites:** ASCI 250 and AGRO 240 or 340; AECN 201 recommended.**Notes:** AECN 201 recommended.**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**Format:** LEC**ACE:** ACE 10 Integrated Product**ASCI 453 Dairy Management****Crosslisted with:** ASCI 453H**Prerequisites:** Senior standing and ASCI 250, or permission. ASCI 240, 320 and 330 recommended.**Description:** Management of a dairy enterprise for efficient production of a quality product. Emphasis on specific problems in breeding, feeding, reproduction, facilities, herd health, and in harvesting and marketing of milk and related economic considerations.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Format:** LEC**ASCI 453H Dairy Management****Crosslisted with:** ASCI 453**Prerequisites:** Senior standing and ASCI 250, or permission. ASCI 240, 320 and 330 recommended.**Description:** Management of a dairy enterprise for efficient production of a quality product. Emphasis on specific problems in breeding, feeding, reproduction, facilities, herd health, and in harvesting and marketing of milk and related economic considerations.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Format:** LEC**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:** 2**Max credits per semester:** 2**Max credits per degree:** 2**Format:** LEC**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**Format:** LEC**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:** 2**Max credits per semester:** 2**Max credits per degree:** 2**Format:** LEC



**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**Format:** LEC**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**Format:** LEC**Offered:** SPRING**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**Format:** LEC**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 understand 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**Format:** LEC**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**Format:** FLD**ASCI 491 Animal Science Seminar****Prerequisites:** Senior standing.**Description:** Student-led discussion of selected current topics significant to the livestock, poultry, and meat industry. Concerns and issues of society as they relate to local, national, and international animal agriculture.**Credit Hours:** 1**Max credits per semester:** 1**Max credits per degree:** 1**Format:** LEC**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**Format:** IND

**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

**Format:** IND