

ANSC - ANIMAL SCIENCE (ANSC)

ANSC 101 Introductory Seminar for Animal Science

Credit 1. 1 Lecture Hour. Orientation to programs and opportunities in the Department of Animal Science, to create an awareness of campus resources for financial aid and tutoring, to develop goals for college career and to initiate planning for internship and job opportunities.

ANSC 107 General Animal Science

Credits 3. 3 Lecture Hours. (AGRI 1319, 1419*) General Animal Science. General understanding of all aspects of the livestock industry; basic agriculture nomenclature of breeds, species and types of livestock; reproduction, nutrition, genetics, food safety, growth and development of beef cattle, sheep, horses, swine, dairy cattle and poultry; brief description of the companion animal industry.

ANSC 108 General Animal Science Laboratory

Credit 1. 2 Lab Hours. (AGRI 1119, AGRI 1419*) General Animal Science Laboratory. General overview of the beef cattle, dairy cattle, horse, sheep, swine and poultry industries; information on major breeds, anatomy, phenotypic and genotypic selection criteria and production practices for each species; major disciplines of the animal industry including breeding and genetics, nutrition, reproductive physiology and products; utilization of live animals, models and feedstuffs/equipment to enhance experiential learning approach. **Prerequisite:** Concurrent enrollment in ANSC 107.

ANSC 111 Animal Production Systems

Credits 3. 2 Lecture Hours. 2 Lab Hours. Transformative experiences related to beef cattle, dairy cattle, equine, sheep, swine, goats, companion animals, meats, food products and food safety; exposure to available animal science careers and potential areas of future/additional study. **Prerequisites:** Grade of C or better in ANSC 101, ANSC 107, and ANSC 108.

ANSC 113 Farm Animal Biosystems

Credits 2. 2 Lecture Hours. Information regarding the processes by which networks of cells are controlled and coordinated within the farm animal. **Prerequisites:** Grade of C or better in ANSC 101, ANSC 107 and ANSC 108.

ANSC 117 Texas Barbecue

Credit 1. 1 Lecture Hour. Survey, demonstration and participation in preparation techniques of Texas barbecue; comparison of regional and international barbecue methods. **Prerequisite:** First year students.

ANSC 201 Introductory Equine Care and Use

Credits 2. 2 Lecture Hours. Survey of basic equine care and use; breeds of horses and their use; care and maintenance of equines including feeding, health care, housing and equipment.

ANSC 205 Animal Science Laboratory Preparation Methods

Credits 2. 1 Lecture Hour. 2 Lab Hours. Study of basic animal production systems knowledge and effective pedagogical techniques to prepare animal science laboratories and animal handling methods; includes high-impact learning opportunity to allow the practice of pedagogical techniques learned in a controlled and supported environment.

Prerequisite: Grade of C or better in ANSC 107, ANSC 108, and ANSC 111.

ANSC 207 Art and Heritage of Livestock

Credits 3. 3 Lecture Hours. Using art as a venue to understand the legacy and heritage of livestock production and livestock's contribution to civilization and society; from man as hunter, agriculturalist, and finally, as industrialist; from cave paintings to Russell and Remington; history of the effects of painting, poetry, architecture and sculpture on agriculture.

ANSC 210 Companion Animal Science

Credits 3. 3 Lecture Hours. Types, care, physiology, common diseases and common treatments of companion animals (dogs, cats, exotic pets); careers including biomedical research; solutions for problems such as behavior and overpopulation.

ANSC 211 Equine Industry and Career Preparation

Credits 2. 2 Lecture Hours. Identify opportunities and skill sets required to pursue a career in the equine industry; development of resume, communication, professional etiquette and interview skills.

ANSC 215 Introduction to Livestock Evaluation

Credits 2. 1 Lecture Hour. 3 Lab Hours. (AGRI 2321) Introduction to Livestock Evaluation. Live market animal appraisal in relation to carcass and composition; criteria for selection of breeding livestock; techniques for preparation and delivery of oral reason.

ANSC 221 Equine Handling and Safety

Credits 3. 2 Lecture Hours. 2 Lab Hours. Working around horses safely and effectively; includes equine behavior, proper handling techniques, controlling movement of horses, health assessment and basic management. **Prerequisite:** ANSC 201.

ANSC 230 Animal and Research Experience

Credits 2. 1 Lecture Hour. 2 Lab Hours. Hands-on experience with farm animals; development and understanding of the scientific method; demonstration of critical thinking skills to evaluate scientific information.

ANSC 242 Growth and Development of Livestock

Credits 3. 2 Lecture Hours. 2 Lab Hours. Evaluation of slaughter livestock as related to growth and development, production efficiency, carcass value; selection of breeding animals based on performance, production records, visual appraisal; principles of growth biology; biotechnological tools used to manage growth and development. **Prerequisites:** ANSC 107 and ANSC 108.

ANSC 289 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours. Selected topics in an indented area of animal science. May be repeated for credit.

Prerequisite: Approval of instructor.

ANSC 291 Research

Credits 0 to 4. 0 to 4 Other Hours. Research conducted under the direction of faculty member in animal science. May be repeated 2 times for credit. **Prerequisites:** Freshman or sophomore classification and approval of instructor; 2.0 GPR in major and overall.

ANSC 302 Basic Beef Cattle Production

Credits 3. 3 Lecture Hours. Fundamental concepts of beef management and production principles. Service course recommended for non-animal science majors. **Prerequisites:** ANSC 107 and ANSC 108.

ANSC 303/NUTR 303 Principles of Animal Nutrition

Credits 3. 3 Lecture Hours. Scientific approach to nutritional roles of water, carbohydrates, proteins, lipids, minerals, vitamins, and other dietary components; emphasis on the comparative aspects of gastrointestinal tracts and on digestion, absorption, and metabolism of nutrients.

Prerequisites: CHEM 119 and a grade of C or better in ANSC 113, or CHEM 222 or CHEM 227; junior classification or approval of instructor.

Cross Listing: NUTR 303/ANSC 303.

ANSC 305 Animal Breeding

Credits 3. 2 Lecture Hours. 2 Lab Hours. A systems approach to selection and mating of livestock; gene frequency, heritability, relationship, inbreeding, linebreeding, heterosis, crossbreeding, direct and correlated response to selection, and use of pedigree, family, progeny testing and indices for selection. **Prerequisites:** Grade of C or better in ANSC 111 and ANSC 113; GENE 301; STAT 301, STAT 302, STAT 303, or ANSC 309; junior classification or approval of instructor.

ANSC 307/FSTC 307 Meats

Credits 3. 2 Lecture Hours. 3 Lab Hours. Integrated studies of the meat animal processing sequence regarding the production of meat-type animals and the science and technology of their conversion to human food. **Prerequisites:** Grade of C or better in ANSC 113; junior classification or approval of instructor. **Cross Listing:** FSTC 307/ANSC 307.

ANSC 309 Applied Animal Record Keeping

Credits 3. 2 Lecture Hours. 2 Lab Hours. Keeping, analyzing and interpreting records to make fully-informed decisions on a day-to-day basis for production and management scenarios; practical application unique to animal science and meat processing. **Prerequisite:** Junior or senior classification.

ANSC 311 Equine Behavior and Training

Credits 2. 1 Lecture Hour. 3 Lab Hours. Equine behavior and application of principles of psychology to training horses; systematic approaches to horse training emphasizing principles of learning; equipment and its use; stable management and preparation of horses for competition; separate laboratory sections for students with varying backgrounds. **Prerequisite:** Junior or senior classification.

ANSC 312 Intermediate Horse Training and Sales

Credits 2. 1 Lecture Hour. 3 Lab Hours. Advanced scientific methods and techniques for execution of equine performances in hunter, dressage and stock horse events; anatomical, physiological and psychological implications; preparation of horses and riders. **Prerequisite:** Junior or senior classification.

ANSC 314 Wool Evaluation and Grading

Credits 2. 1 Lecture Hour. 3 Lab Hours. Evaluation of U.S.D.A. grades for wool and mohair; steps involved in processing raw wool into finished fabric; genetic and environmental factors affecting quality characteristics of wool and mohair; grading, evaluation and selection of fleeces for economic value; oral and written defense of judgments.

ANSC 315 Livestock Judging

Credits 2. 1 Lecture Hour. 3 Lab Hours. Selection and evaluation of beef cattle, swine, sheep and horses. Ability to present accurate, clear and concise oral and written reasons stressed. **Prerequisites:** ANSC 107 and ANSC 108; junior or senior classification.

ANSC 316 Equine Selection and Judging

Credits 2. 1 Lecture Hour. 3 Lab Hours. Detailed evaluation and comparison of horses; selection and critique of athleticism and performance in horses; industry trends addressed; oral and written defense of judgments also explained and expected; required for participation on the Horse Judging Team. **Prerequisite:** Junior or senior classification or approval of instructor.

ANSC 317 Meat Selection, Evaluation and Grading

Credits 2. 1 Lecture Hour. 3 Lab Hours. Selection and grading of carcasses and wholesale cuts of beef, pork and lamb; principles of evaluation included in carcass contests and progeny testing. **Prerequisites:** ANSC 107 and ANSC 108.

ANSC 318 Animal Feeds and Feeding

Credits 3. 2 Lecture Hours. 3 Lab Hours. Scientific approaches associated with precision feeding and diet formulation to match nutrient availabilities of feedstuffs with requirements of various classes of livestock species; emphasis on cost-effective feeding strategies to optimize animal productivity, and end-product quality and safety, while mitigating environmental impacts and enhancing animal health and welfare. **Prerequisite:** Grade of C or better in ANSC 111, ANSC 113 and ANSC 303/NUTR 303; junior classification or approval of instructor.

ANSC 320 Animal Nutrition and Feeding

Credits 3. 3 Lecture Hours. Nutritional functions of water, protein, carbohydrates, fats, minerals and vitamins and their digestion, absorption, use and excretion; energy, protein and forage feedstuff characteristics and processing; nutritional requirements, ration formulation and feeding methods for farm animals; general course for non-animal science majors. **Prerequisite:** Junior or senior classification or approval of instructor; restricted to students in the college of agriculture and life sciences.

ANSC 325 Advanced Livestock and Product Evaluation

Credits 2. 1 Lecture Hour. 3 Lab Hours. Advanced evaluation of cattle, swine, sheep and equine; products produced or associated with each species; advanced oral or written defense of judgments associated with changing trends in these industries. May be repeated three times for credit. **Prerequisite:** Junior or senior classification.

ANSC 326/FSTC 326 Food Bacteriology

Credits 3. 3 Lecture Hours. Microbiology of human foods and accessory substances; raw and processed foods; physical, chemical and biological phases of spoilage; standard industry techniques of inspection and control. **Prerequisite:** Junior or senior classification or approval of instructor. **Cross Listing:** FSTC 326/ANSC 326.

ANSC 327/FSTC 327 Food Bacteriology Lab

Credit 1. 3 Lab Hours. Laboratory to accompany ANSC 326/FSTC 326 or FSTC 326/ANSC 326. **Cross Listing:** FSTC 327/ANSC 327.

ANSC 333 Reproduction in Farm Animals

Credits 2. 2 Lecture Hours. Physiological principles of reproductive processes in cattle, sheep, swine, and horses including sperm and ova production, estrus, fertilization, gestation and parturition. **Prerequisites:** Grade of C or better in ANSC 111 and ANSC 113.

ANSC 334 Reproduction in Farm Animals Laboratory

Credit 1. 0 Lecture Hours. 2 Lab Hours. . Laboratory techniques relevant to reproductive processes in cattle, sheep, swine, and horses including sperm and ova production, estrus, fertilization, gestation, and parturition. **Prerequisite:** Grade of C or better in ANSC 333 or concurrent enrollment.

ANSC 337 Meat Merchandising

Credits 2. 1 Lecture Hour. 3 Lab Hours. Steps of meat processing and merchandising of retail and foodservice; merchandising practices such as selection, identification, fabrication, pricing, packaging and distribution. **Prerequisites:** ANSC 307/FSTC 307; junior or senior classification.

ANSC 360 System Dynamics for Animal Sciences

Credits 2. 2 Lecture Hours. . System dynamics modeling for the analysis of business policy and strategy; study of visualization of a business organization in terms of structures and policies that create dynamics and regulate performance; emphasis on animal production. **Prerequisite:** Grade of C or better in ANSC 303/NUTR 303 or ANSC 320, or approval of the instructor.

ANSC 380 Animal Science for Agricultural Science

Credits 3. 3 Lecture Hours. . Preparation to become agriculture, food and natural resources (AFNR) teachers with an opportunity for the expansion of knowledge of the primary livestock species; information relating to breeding and genetics, reproduction, physiology, nutrition, management systems, products and disease; a brief exploration of companion animals. **Prerequisite:** ANSC 107 and Agricultural Science major.

ANSC 399 Animal Science Experience

Credits 0. 0 Lecture Hours. Participation in an approved high-impact learning practice; reflection on professional outcomes from animal science body of knowledge; documentation and self-assessment of learning experience at mid and final curriculum points. **Prerequisite:** Junior or senior classification.

ANSC 402 Exploring Animal Industries

Credits 2. 2 Lecture Hours. Instruction for students nearing the end of their undergraduate studies; theoretical understanding of organizations and human resources available to students; awareness and understanding of the job application process, resume and cover letter writing; networking, professional and business attire; ethics related to job searches and retention. **Prerequisite:** Junior or senior classification.

ANSC 404 Behavior and Management of Domestic Animals

Credits 4. 3 Lecture Hours. 2 Lab Hours. Application of behavior of cattle, horses, sheep, goats and swine to their management; basic principles, physiology of behavior, perception, training, predators, use of dogs in livestock production, stress and animal welfare. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318 and ANSC 333; junior or senior classification or approval of instructor.

ANSC 406 Beef Cattle Production and Management

Credits 4. 3 Lecture Hours. 2 Lab Hours. Principles involved for profitable and sustainable, integrated beef cattle production as considered from the perspective of the U.S. cow-calf sector and from an overall systems-based approach. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318, and ANSC 333; junior or senior classification or approval of instructor.

ANSC 408 Management of Stocker and Feedlot Cattle

Credits 4. 3 Lecture Hours. 2 Lab Hours. Basic principles involved in feeding, management, marketing and disease control of stocker and feeder cattle from weaning through slaughter for economical production of beef. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318, and ANSC 333; STAT 301, STAT 302, STAT 303, or ANSC 309; junior or senior classification.

ANSC 411 Equine Nutrition and Health

Credits 3. 3 Lecture Hours. Designed to provide knowledge of nutrition and health in the horse; gastrointestinal anatomy, nutrient utilization, feeding management and nutritional requirements; metabolic diseases, infectious diseases, internal and external parasites, and herd health management. **Prerequisite:** Junior or senior classification.

ANSC 412 Swine Production and Management

Credits 4. 3 Lecture Hours. 2 Lab Hours. Basic principles and their practical application in efficient, economical pork production; all areas of production—breeding and selection, nutrition, housing and equipment, marketing, herd health and economic management. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318, and ANSC 333; junior or senior classification or approval of instructor.

ANSC 414 Sheep and Goat Production and Management

Credits 4. 3 Lecture Hours. 2 Lab Hours. In-depth hands-on experiences related to sheep and goat production and management providing an advanced understanding of small ruminant production. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318, and ANSC 333; junior or senior classification or approval of instructor.

ANSC 415 Brazil: Comparative Ruminant Production

Credits 3. 3 Lecture Hours. Contrast two scenarios of ruminant production in Brazil; the effects of globalization on the two different production systems. **Prerequisites:** ANSC 303/NUTR 303 or ANSC 320 or approval of instructor.

ANSC 418 Equine Exercise Physiology

Credits 3. 2 Lecture Hours. 2 Lab Hours. Changes within the systems of the horse resulting from the physical stresses of exercise, adaptations of systems in response to a training regimen; methodology for measuring improvement in physical condition; foundation for development of training programs for horses in moderate, intense or prolonged performance activities. **Prerequisites:** Junior or senior classification and approval of instructor.

ANSC 419 Equine Reproduction

Credits 3. 3 Lecture Hours. Reproductive anatomy of the stallion and mare; industry and scientific practices; comprehensive analysis of the body of scientific research; development of critical thinking ability to assess and discuss previous research in comparison of needed research. **Prerequisites:** ANSC 201 and junior or senior classification or approval of instructor.

ANSC 420 Equine Production and Management

Credits 4. 3 Lecture Hours. 2 Lab Hours. Application of biological and biotechnological principles and concepts in areas including genetics, breeding, nutrition, reproduction, immunology, parasitology, anatomy and exercise physiology to efficient production of horses for market; management of equine enterprises. **Prerequisite:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318, and ANSC 333; junior or senior classification or approval of instructor.

ANSC 423 Issues in the Equine Industry

Credit 1. 1 Lecture Hour. Integration of cumulative knowledge acquired in the equine science curriculum to demonstrate critical thinking and communication skills to address critical issues in the equine industry. **Prerequisite:** Junior or senior classification; approval of instructor.

ANSC 429 Dairy Production Management

Credits 4. 3 Lecture Hours. 2 Lab Hours. Major principles for profitable and sustainable dairy production for a commercial dairy operation; provides hands-on experiences in dairy cattle management; develops critical thinking skills to make dairy cattle management decisions. **Prerequisite:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318 and ANSC 333; junior or senior classification or approval of instructor.

ANSC 434 Animal Reproduction Management

Credits 4. 3 Lecture Hours. 2 Lab Hours. Available and emerging technologies including control of ovulation, artificial insemination, embryo manipulation and transfer, in vitro fertilization and animal cloning for managing reproduction of farm animals; hands-on sessions using available technologies including artificial insemination of cattle. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318 and ANSC 333; junior or senior classification or approval of instructor.

ANSC 436 Texas Panhandle Beef Production Tour

Credits 2. 2 Lecture Hours. Facets of beef production from cow/calf operations to retail product; experiential knowledge of technologies and practices to enhance efficiency to enlighten students regarding the array of career opportunities in the beef production industry. **Prerequisites:** Junior or senior classification or approval of instructor.

ANSC 437 Marketing and Grading of Livestock and Meat

Credits 4. 3 Lecture Hours. 2 Lab Hours. Study of USDA livestock and carcass grades; understanding current market trends for beef, pork, lamb and goat; review of branded and certified programs; principles applied in contracting, breakeven determination, hedging, and grid or formula pricing. **Prerequisite:** Junior or senior classification or approval of instructor.

ANSC 439 Feedlot Risk Management

Credits 2. 2 Lecture Hours. Advanced study of livestock marketing techniques; cash sales, video sales, futures and options markets, forward contracting; problem solving in real-time livestock marketing situations; risk of ownership of hypothetical livestock operations. **Prerequisites:** junior or senior classification or approval of instructor.

ANSC 447 Advanced Meat Science and Technology

Credits 4. 3 Lecture Hours. 3 Lab Hours. Advanced basic and applied studies of meat science and/or technology utilizing the underlying physiological and structural components for conversion to human food; understanding the influence of pre- and post-harvest factors on meat quality, composition, color, packaging, sensory and preparation factors; applying scientific and business principles to manufacturing and process flow of commercial meat food products and demonstrating knowledge of these principles through development of meat products. **Prerequisites:** Grade of C or better in ANSC 305, ANSC 307/FSTC 307, ANSC 318 and ANSC 333; GENE 301; STAT 301, 302, 303, or ANSC 309; junior or senior classification or approval of instructor.

ANSC 451 Current Issues in Animal Agriculture

Credits 4. 3 Lecture Hours. 2 Lab Hours. Preparation to project a professional image and the use of communication skills to describe animal agriculture; converse about the strengths and weaknesses of animal agriculture. **Prerequisites:** Junior or senior classification or approval of instructor.

ANSC 457/FSTC 457 Hazard Analysis and Critical Control Point System

Credits 3. 3 Lecture Hours. Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices and standard operating procedures development. **Prerequisite:** FSTC 326/ANSC 326 or ANSC 326/FSTC 326, or approval of instructor. **Cross Listing:** FSTC 457/ANSC 457.

ANSC 467 Processed Meat Food Operations

Credits 3. 2 Lecture Hours. 2 Lab Hours. Application of scientific and business principles to manufacturing and process flow of commercial meat food products. **Prerequisites:** ANSC 307/FSTC 307 or FSTC 307/ANSC 307 or approval of department head.

ANSC 470/FSTC 470 Quality Assurance for the Food Industry

Credits 3. 3 Lecture Hours. Principles of food system process control including statistical process control (SPC) and the tools required to assure uniform communication and understanding of quality assurance systems. **Prerequisite:** Junior or senior classification. **Cross Listing:** FSTC 470/ANSC 470.

ANSC 481 Seminar

Credit 1. 1 Lecture Hour. Review of literature and research problems related to the livestock and food industries; preparation of a technical report including an oral presentation supported by a written technical paper. **Prerequisite:** Senior classification.

ANSC 484 Livestock Practicum

Credit 1. 2 Other Hours. Provides an opportunity to learn skills required in livestock production; planned for students who have had limited farm and ranch experience in one or more species. **Prerequisite:** Junior or senior classification in animal science or approval of instructor.

ANSC 485 Directed Studies

Credits 0 to 4. 0 to 4 Other Hours. Directed individual study of selected problem in field of animal science. **Prerequisites:** Junior or senior classification; written approval of professor supervising the activity; 2.0 GPR in major and overall.

ANSC 487/FSTC 487 Sensory Evaluation of Foods

Credits 3. 2 Lecture Hours. 2 Lab Hours. Application of sensory science principles and practices to food systems including an understanding of discriminative, descriptive and consumer sensory techniques. **Prerequisites:** CHEM 222 or CHEM 228; junior or senior classification. **Cross Listing:** FSTC 487/ANSC 487.

ANSC 489 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 8 Lab Hours. Selected topics in an identified area of animal science. May be repeated for credit. **Prerequisite:** Junior or senior classification.

ANSC 491 Research

Credits 0 to 4. 0 to 4 Other Hours. Research conducted under the direction of faculty member in animal science. May be repeated 3 times for credit. Registration in multiple sections of this course is possible within a given semester provided that the per semester credit hour limit is not exceeded. **Prerequisite:** Junior or senior classification and approval of instructor; 2.0 GPR in major and overall.

ANSC 494 Animal Science Internship

Credits 0 to 5. 0 to 5 Other Hours. Independent study and supervised field experience related to the student's professional interest. **Prerequisites:** Junior or senior classification or approval of instructor; 2.0 GPR in major and overall.

ANSC 495 International Agriculture and Animal Production

Credits 3. 3 Lecture Hours. Study of international agriculture and animal production in the world market; impact on foreign economies and culture; considerations of import and export marketing on products to and from the U.S. to provide students the exposure to international economies and cultures; study abroad. **Prerequisites:** Grade of C or better in ANSC 107 or approval of instructor.

ANSC 498 Animal Science Capstone

Credits 4. 4 Lecture Hours. Senior capstone project for students preparing to enter a career related to animal science or a professional school; individual projects based on a self-selected topic in animal science; includes a paper containing both translational and technical descriptions plus statements regarding the expected financial and social impacts of selected topic. **Prerequisite:** Senior classification.