

Undergraduate Animal Science Courses

ANSC 1100. Transitioning to University Studies in Animal Sciences. 1 Credit Hour (Lecture: 1 Hour, Lab: 1 Hour).

Practical study designed to prepare the student for university life, aid in the development of skills for academic success, promote personal growth and responsibility, and encourage active involvement in the learning process from an individual college perspective.

ANSC 1105. Introduction to Veterinary/Medical Terminology. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).

Introduction to veterinary/medical terminology. The foundation of veterinary terminologies and medical language roots, prefixes, suffixes, and combining forms are covered along with musculoskeletal and dissection/spatial body positions. Designed to provide a comprehensive entry-level study of medical language for health career learners.

ANSC 1202. Barbeque Science. 2 Credit Hours (Lecture: 1 Hour, Lab: 2 Hours).

An introduction to the science of meat preparation, incorporating food quality and safety, ingredients and flavors, cooking techniques, cut selection and consumer preferences. Lab fee: \$2.

ANSC 1309. Introduction to Horse Production. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

An introduction to some of the fundamental aspects of horse production, including health, genetics and disease, nutrition, reproduction, and exercise physiology.

ANSC 1310. Introduction to Horse Management. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

An introduction to fundamental aspects of horse management, including the status of the equine industry. Other topics include functional anatomy, locomotion, identification, equine behavior in relation to modification to training, health care management and stable management. Lab fee: \$2.

ANSC 1320. Rodeo Production and Skills. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

A study of rodeo activities including organization, promotion, and management of rodeos. Skill development in all standard events will be emphasized with special attention to student needs. Lab fee \$10.

ANSC 2101. Animal Science Industry. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).

A review of the opportunities available to Animal Science students upon graduation, and the appropriate concentrations to achieve career goals. Prerequisites: Must be an ANSC major and must have completed AGRI 1419 or equivalent.

ANSC 2301. Foaling Management. 3 Credit Hours (Lecture: 3 Hours, Lab: 3 Hours).

Management of the pregnant mare, parturition, and the neonatal foal. Students are required to attend overnight foal watch sessions as partial requirement for the course. Prerequisite: ANSC 1309 or instructor approval.

ANSC 2305. Horse Handling Techniques. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Skills development in basic horse handling and application of general principles of equine psychology and behavior. Students will be assigned a young horse to halter train for fundamental groundwork. Prerequisite: instructor approval Lab fee: \$2.

ANSC 2307. Meat Animal Evaluation. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Evaluation of market animals including beef cattle, swine, sheep and goats. Emphasis is on selection of breeding animals and evaluation of market animals and economically important characteristics for each species. Prerequisite: AGRI 1419.

ANSC 2308. Meat and Carcass Evaluation. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Evaluation of meat cuts and carcasses from cattle, swine, sheep and goats. Emphasis is on factors affecting quality and yield for each species. Techniques for evaluation and for preparation of written reasons. This course is required for participation in the meat judging program, but is open to all students meeting the prerequisites. Prerequisite: AGRI 1419.

ANSC 2350. Anatomy and Physiology of Domestic Animals. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Introduction to comparative anatomy and physiology of domestic animals. The roles of the various systems of the animal body will be studied with practical applications made to animal production. Topics include anatomy and physiology of the skeletal, muscular, cardiovascular, pulmonary, digestive and reproductive systems. Prerequisite: AGRI 1419.

ANSC 3301. Livestock Management. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Application of animal handling and management techniques for livestock. A study of the principles of breeding, feeding, disease and parasite control for beef, sheep, goats and swine. Prerequisites: AGRI 1319 or AGRI 1419; Agriculture Services and Development majors only.

ANSC 3303. Pastures and Forages. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Identification, management, and utilization of forage crops as they pertain to the production of livestock and related species, including pastures, hay, and silage.

ANSC 3305. Equine Evaluation. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

A Study of the influence of heredity, conformation, training and environmental effects on performance. A detailed evaluation of the athletic performance and conformation as it relates to function, and the criteria used for evaluation and selection of breeding, race and performance animals. Prerequisite: ANSC 1310.

ANSC 3307. Livestock and Meat Evaluation. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Comparative evaluation of breeding and market animals with emphasis on live animal selection, official carcass grading, carcass contest, wholesale cut selection and pricing, and performance testing. Oral reasons and written justifications on placing classes will be emphasized. Prerequisite: AGRI 1325 or approval of department head and instructor. Lab fee \$2.

ANSC 3308. Principles of Animal Nutrition. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

An evaluation of the anatomical, physiological, and biochemical processes of digestion, absorption, and metabolism; overview of nutrients (water, carbohydrates, lipids, proteins, minerals, and vitamins) and their use within the body of animals. Prerequisites: BIOL 1406 or 1407; and CHEM 1407, 1411 or 1412.

ANSC 3309. Applied Animal Nutrition and Feeding. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Application of nutritional concepts; understanding of nutrient requirements and development of appropriate rations for livestock. Prerequisite: ANSC 3308.

ANSC 3315. Animal Diseases and Parasites. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Exploratory study of infectious and non-infectious farm animal diseases, parasites, and parasitic diseases. Introduction to disease and parasite prevention through sanitation and treatment. Prerequisite: AGRI 1419.

ANSC 3319. Animal Breeding. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Specialized study of the application of genetic principles to livestock breeding. Improvement of the economic traits of farm animals by utilizing the principles of heritability and selection. Breeding and selection systems in cattle, swine, sheep, and horse production. Prerequisites: AGRI 3409, or BIOL 3303 and BIOL 3103, or BIOL 3403, or equivalent.

ANSC 3320. Livestock Event Production. 3 Credit Hours (Lecture: 1 Hour, Lab: 4 Hours).

Planning and implementing livestock events. Publicity, promotion, budgeting, scheduling, soliciting sponsors, and event production.

ANSC 3323. Ethical Issues in Agriculture and the Natural Resources. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Students will examine the several major ethical issues facing agriculture and natural resources sciences in our current society. Readings, discussions and lectures will focus on the scientific, capitalistic, and philosophical motivation in common ethical issues. Upon completion of the course, students will be able to construct and dissect ethical arguments and hopefully become more aware of the ethical dilemmas we all face each day.

ANSC 3325. Equine Exercise Physiology and Conditioning. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Influence of exercise and conditioning on muscle physiology, cardiovascular physiology, the biomechanics of locomotion, and energy utilization. Fundamental rehabilitation and treatment of sports injuries will be introduced. Prerequisites: ANSC 1309 and ANSC 2350; OR instructor approval.

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ANSC 3330. Basic Equine and Assisted Therapy. 3 Credit Hours (Lecture: 1 Hour, Lab: 6 Hours).

Study and application of the methods of using the horse in a therapy program. Guidelines from the North American Riding for the Handicapped Association. Students will gain practical experience in the development and conduct of an equine-assisted therapy program. Prerequisite: Approval by instructor or Department Head.

ANSC 3331. Advanced Equine Assisted Therapy. 3 Credit Hours (Lecture: 1 Hour, Lab: 4 Hours).

Advanced studies in the use of the horse in a therapeutic riding program. Students will gain the hands-on experience and the information about riding, instruction and safety necessary to become a Certified Therapeutic Riding Instructor with the North American Riding for the Handicapped Association. Prerequisites: ANSC 1309, 3330, and approval of the instructor.

ANSC 3335. Equine Behavior Modification. 3 Credit Hours (Lecture: 3 Hours, Lab: 3 Hours).

Application of the principles of equine psychology to train horses. Prerequisite: Approval of instructor.

ANSC 3360. Dairy Farm Evaluation. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

On-site dairy farm inspections, evaluating management systems, and developing recommendations to enhance farm performance. Topics include dairy economics, management, and records. Prerequisite: AGRI 1419.

ANSC 3408. Physiology of Reproduction. 4 Credit Hours (Lecture: 3 Hours, Lab: 2 Hours).

Fundamental aspects of animal reproduction: basic reproductive anatomy, physiology, endocrinology, histology and behavior and how to apply it to production and effective management of domestic livestock. Prerequisites: AGRI 1419 and ANSC 2350.

ANSC 3409. Feeds and Feeding. 4 Credit Hours (Lecture: 3 Hours, Lab: 2 Hours).

Study of principal feeds and feed-stuffs from a practical point of view. Feeding standards and calculation of rations for maintenance, growth, fattening, and for milk, wool, and egg production. Prerequisite: Junior classification and AGRI 1419 with a C or better. Lab fee \$2.

ANSC 3410. Principles of Equine Reproduction. 4 Credit Hours (Lecture: 3 Hours, Lab: 2 Hours).

Theory and practices associated with equine reproduction, including mare and stallion anatomy, endocrinology, folliculogenesis, breeding soundness exams, record keeping, and health care. Prerequisite: ANSC 1309 or equivalent.

ANSC 3421. Meat Science. 4 Credit Hours (Lecture: 3 Hours, Lab: 2 Hours).

Basic physical and chemical components of meat and their influence on specific attributes of meat and meat products. Scientific and technical procedures involved in processing food animals, and anatomy, nomenclature, and evaluation of meats. Food safety issues in the meat industry and Hazard Analysis Critical Control Points. Prerequisites: AGRI 1419 and ANSC 2350.

ANSC 4084. Internship. 3,6 Credit Hours (Lecture: 0 Hours, Lab: 48 Hours).

Formally arranged and approved on-the-job training with cooperating sponsor in a commercial or private sector of the livestock or meats industries. A minimum of 120 hours of training is required for completion. Actual required hours will be determined by the nature of the internship and the internship coordinator. Oral and written reports of internship experience are required. This course may be offered pass/fail. Prerequisite: Approval of department head.

ANSC 4086. Animal Science Problems. 1-4 Credit Hours (Lecture: 0 Hours, Lab: 1-4 Hours).

Individualized study of current topics in student's major concentration of study or supporting discipline. Specific content and credit dependent upon student's interest, needs, and depth of study. May be repeated for a maximum of 6 semester hours credit. Prerequisite: Senior classification and advance approval by academic advisor.

ANSC 4090. Special Topics in Animal Science. 1-4 Credit Hours (Lecture: 1-4 Hours, Lab: 0 Hours).

Special Topics. (Credit-variable) This course deals with selected topics in animal science not covered by existing courses and may be repeated for credit when topics vary, with a maximum of six hours counting toward the degree. Prerequisite Course(s): Approval of department head.

ANSC 4185. Senior Seminar. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).

A review of current problems and developments in agriculture; professional opportunities and responsibilities; individual investigations and reports. Prerequisite: Senior classification.

ANSC 4300. Research and Writing in Animal Science. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours). [WI (<http://catalog.tarleton.edu/academicaffairs/>)]

Detailed discussions and literature review of current knowledge in areas such as reproductive and alimentary physiology, nutrition, parasitology, pharmacology, and genetics. Topics will include experimental design and statistical evaluation of agricultural research. Students will prepare various types of writings based on scientific literature. Prerequisite: senior classification in agriculture.

ANSC 4301. Equine Breeding Management. 3 Credit Hours (Lecture: 3 Hours, Lab: 3 Hours).

Advanced theory and practices associated with equine reproduction, including breeding soundness exams, record keeping, and health care. Practices related to personnel management and economics of a equine breeding operation will be introduced. Prerequisite: ANSC 3410 or ANSC 3408 or instructor approval.

ANSC 4302. Dairy Cattle Production. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Principles of dairy science and their application to the feeding and management of dairy cattle. Topics include herd improvement, selection, feeding, replacement stock development, disease control, animal welfare, milk marketing, and associated management practices. Prerequisites: ANSC 3408; ANSC 3409 or ANSC 3309 or ANSC 4306; or permission of instructor.

ANSC 4303. Beef Cattle Production. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

An overview of the beef cattle industry, with emphasis on the seedstock and cow-calf sectors. A study of the fundamental concepts and principles of beef cattle production. Integration of principles of nutrition, breeding, physiology, and marketing into complete production and management programs. In-depth coverage of seedstock and cow-calf segments of the industry, with introduction to stocker cattle production and feedlot management. Prerequisite: ANSC 3408; ANSC 3309 or ANSC 3409.

ANSC 4308. Environmental Physiology of Farm Animals. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Studies of farm animals and interactions with their physical environment. Detailed attention is given to the effects of changes and extremes in natural and artificial animal environments, including temperatures, shelter, altitude, humidity, crowding, and other stress factors associated with modern livestock production and handling practices. Prerequisites: AGRI 1419 or AGRI 1319 with a C or better, and ANSC 2350 or approval of instructor.

ANSC 4310. Swine Production. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Applications of nutrition, genetics, breeding, and reproduction to swine production. All aspects of production, with a focus on production systems. Prerequisite: ANSC 3408; ANSC 3309 or ANSC 3409.

ANSC 4312. Meat Processing and Merchandising. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

The chemical and physical characteristics of meats and their relations to the processing and manufacturing of meat food items. Carcass value as influenced by merchandising techniques and practices. Sanitation control and commercial and retail operations will be stressed. Laboratory work will include meat processing and the development of competencies in processing all classes of livestock. Prerequisite: ANSC 3421 or approval of department head. Lab fee \$10.

ANSC 4313. Sheep and Goat Production. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Practical applications of breeding, feeding, management, disease and parasite control with regard to range and farm conditions; fitting and showing. Wool and mohair production; grading; sorting; and marketing. Prerequisites: ANSC 3408; ANSC 3409 or ANSC 4306 or ANSC 3309 or permission of instructor.

ANSC 4314. Food Quality Assurance. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

The basis behind food quality control/assurance is discussed along with its application to various food systems to control and improve the quality and safety of our food supply. Credit will not be awarded for ANSC 4341 and ANSC 5314. Lab fee: \$2.

ANSC 4319. Biotechnology in Agriculture. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

A study of modern biotechnology in agriculture today. This course will explore important advancements and tools in fields such as genetics, agronomy, and bioinformatics. It will also examine the legal constraints and ethical debates that surround these technologies. Credit will not be awarded for both ANSC 4319 and ANSC 5319. Prerequisites: AGRI 3409, or BIOL 3303 and 3103, or instructor approval.

ANSC 4320. Stocker Cattle Production and Feedlot Management. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

An in-depth examination of nutrition, marketing, consumer relations, and management of beef cattle stocker and feedlot operations. . Prerequisite: ANSC 3421; ANSC 3309 or ANSC 3409, or instructor approval.

ANSC 4330. Horse Enterprise Management. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

Individualized instruction in management techniques for horse enterprises. Record systems, marketing, and business operation procedures. Prerequisite: ANSC 3410 or ANSC 3408; ANSC 3309 OR ANSC 3314 or approval of instructor.

ANSC 4338. Value-Added Processed Meats. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

The application of scientific principles and practices to further processed meat products. Interrelationships among tissue characteristics, ingredients, handling practices, processing technologies and storage conditions as they affect the quality, safety, and stability of muscle foods. Prerequisite: ANSC 3421 Lab fee: \$2.

ANSC 4350. Feed Analysis. 3 Credit Hours (Lecture: 1 Hour, Lab: 4 Hours).

Analytical techniques for determining the nutrient content of animal feeds. Students will learn to measure moisture, protein, fiber, carbohydrates, fats, and minerals. Different methods for estimating the useable energy content of feeds will be presented. Prerequisite: CHEM 1412 or approval of department head.

ANSC 4351. Environmental Stewardship in Animal Agriculture. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Techniques and practices in animal production for good stewardship of land, water, and air. Review of applicable state and federal environmental laws. Prerequisite: AGRI 1419; CHEM 1411 or CHEM 1407; BIOL 1406 or BIOL 1407; or permission of instructor.

ANSC 4360. Lactation Physiology. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

A systematic overview of lactation physiology using dairy cattle as the primary model. Topics include mammary gland anatomy, milk secretion, mammary gland development, and disease impacts. Prerequisites: ANSC 2350 and ANSC 3408.

ANSC 4361. Animal Science Study Tour. 3 Credit Hours (Lecture: 0 Hours, Lab: 3 Hours).

Field course in animal agriculture designed to acquaint students with live animal operations, related businesses, and food/feed facilities. Includes travel to various sites. Prerequisite: Instructor approval.

ANSC 4390. Special Topics. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Selected topics in the animal sciences. May be repeated for credit when topics vary, with a maximum of six hours. Prerequisite: approval of department head.

ANSC 4401. Ethology. 4 Credit Hours (Lecture: 3 Hours, Lab: 4 Hours).

An introductory course in the behavior of animals, with emphasis on the natural selection, ontogeny, and function of behaviors as they relate to feeding, reproduction, predator-avoidance, and other traits. Both proximate (sensory, hormonal, genetic) and ultimate (ecological and evolutionary) mechanisms are addressed. Prerequisite: C or better in BIOL 1406 and BIOL 1407, and a C or better in either AGRI 1419 or WSES 2322. Lab fee: \$2.

ANSC 4440. Sustainable Livestock Systems. 4 Credit Hours (Lecture: 3 Hours, Lab: 2 Hours).

Overview of beef, dairy, swine, small ruminant and poultry production systems and their applications. Modern concepts, ideas, and methodology associated with the application of technology to reproduction, breeding, health, nutrition and nutrient utilization, across various management schemes. Prerequisite: non-Animal Science majors only; ANSC 3408 or ANSC 3309 or ANSC 3409; or approval of instructor.