

ANIMAL SCIENCE (ANSCI)

ANSCI 1000 Introduction to Animal Science 3 Credits

The organization and structure of the nation's livestock and poultry industries; the variety and nature of animal food products; the biological uniqueness of farm animals; profitable management practices as they apply to commercial animal production.

Components: Laboratory, Class

ANSCI 1010 First Year Experience in Animal and Dairy Science 1 Credit

This course is designed to provide a student with some of the academic and social skills that are necessary to successfully complete their academic career. Topics include successful study skills necessary to maintain success in college-level study, student rights responsibilities, campus diversity issues, academic policies (general and specific to Animal and Dairy Science), academic advising and registration specific to our programs, time management, and campus resources for students.

Components: Class

Prereqs/Coreqs: P. Freshman Standing (less than 30 credits)

ANSCI 1200 Basic Animal Handling 2 Credits

This course is designed to provide students with a basic understanding of animal handling techniques, proper restraint, and handling systems for multiple species. Students will also be introduced to flight zone and anatomical structures in relation to animal handling and movement. Species covered in this class will include beef cattle, dairy cattle, pigs, horses, goats, sheep and exotics. Other species may be utilized, if available.

Components: Laboratory, Class

Prereqs/Coreqs: P. freshman or sophomore standing or consent of instructor

ANSCI 2000 Meat and Animal Evaluation 3 Credits

The evaluation of beef, dairy-beef, sheep, and swine market animals for carcass merit; utilizing performance records in the evaluation and selection of breeding animals.

Components: Laboratory, Class

ANSCI 2040 Calf and Heifer Production Systems 3 Credits

Well-grown dairy calves and heifers play an important role in the future success of all dairy farms. This course will explore management of production systems from birth to freshening of the dairy replacement heifer, including the area of custom-raising heifers. Dairy beef will also be explored.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 1000

ANSCI 2050 Dairy Cattle Evaluation 3 Credits

Problems in evaluating dairy cattle, emphasizing utility as well as show ring requirements. Students will familiarize themselves with alternative evaluation methods.

Components: Class, Laboratory

ANSCI 2120 Topics in Animal Health & Welfare 3 Credits

This course will focus on current issues in animal health and their effects on the welfare of domestic animals. Discussions will focus on the prevention and treatment of major diseases affecting livestock.

Components: Class

Prereqs/Coreqs: P. ANSCI 1000 and (BIOLOGY 1150 or BIOLOGY 1650 or BIOLOGY 1750) or consent of instructor

ANSCI 2500 Feeds and Feeding 3 Credits

This course will introduce students to the science and practice of animal nutrition. In this course students will become familiar with the 6 categories of nutrients and the practical application of nutrition principles to livestock feeding. We will explore feed characteristics, nutrient analysis, and diet formulation. Students will practice formulating diets and begin to examine their relative economy in the management of herds and flocks.

Components: Class, Laboratory

Prereqs/Coreqs: P. ANSCI 1000 or consent of instructor

ANSCI 2990 Pre-Capstone Seminar in Animal Science 1 Credit

This course is designed to guide students in the formation of a proposal for their capstone experience/project. Students will engage in career exploration and career development activities. This course will also encourage independent thinking and learning, teamwork experiences, and other skills needed to succeed in active learning environments, particularly those involved in their capstone experience.

Components: Class

ANSCI 3000 Animal Nutrition 3 Credits

Building on material from ANSCI 2500 students will examine the 6 categories of nutrients, their assimilation and utilization, and situational factors that influence nutrient use and requirements by the animal. Students will also investigate gastrointestinal anatomy and physiology and discuss how an animal's gastrointestinal tract influences practical feeding and management considerations in livestock.

Components: Class

Prereqs/Coreqs: P. ANSCI 2500 with a C- or better, BIOLOGY 1150 or BIOLOGY 1650 with a C- or better, and either CHEMISTRY 1050 or CHEMISTRY 1140 with a C- or better, or consent of instructor

ANSCI 3010 Dairy Product Analysis and Processing 3 Credits

The testing of milk and dairy products; elements of the manufacture of various dairy products in relation to quality milk production on the farm.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 1000 and BIOLOGY 1150 or BIOLOGY 1650, with a C- or better and CHEMISTRY 1050 or 1140, with a C- or better

ANSCI 3030 Genetics of Livestock Improvement 3 Credits

Qualitative and quantitative genetics and their application to the breeding and improvement of domestic animals.

Components: Class

Prereqs/Coreqs: P. ANSCI 1000 and BIOLOGY 1150 or BIOLOGY 1650, with a C- or better and Math 1830 or higher, with a C- or better

ANSCI 3040 Principles of Meat Science and Processing 4 Credits

This course is designed to introduce students to the basics of meat science and processing. Major species discussed include beef, pork, lamb/goat and poultry. Topics include muscle structure and function, animal welfare, carcasses components and meat processing techniques used. USDA inspection and safety regulations, as well as common bacterial contaminations will be covered.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 1000 and BIOLOGY 1150 or BIOLOGY 1650, with a C- or better and CHEMISTRY 1050 or 1140, with a C- or better

ANSCI 3100 Anatomy and Physiology of Domestic Animals 4 Credits

This course will focus on understanding the basic form, structure, and function of the major mammalian physiological systems at the microscopic and macroscopic level. Major emphasis will be placed on relating structure and function of individual tissues to the whole animal. Class discussions and laboratories will focus on farm or domesticated species but comparative references will be made to human and/or laboratory animals when appropriate. Fundamentals of physiological systems learned in this course will be relevant to studies in future animal science courses.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 1000 and BIOLOGY 1150 or BIOLOGY 1650, with a C- or better and CHEMISTRY 1050 or 1140, with a C- or better

ANSCI 3110 Reproductive Physiology of Domestic Animals 4 Credits

This course discusses the anatomy, physiology and basic endocrinology of the reproductive processes in domestic animals. Reproductive similarities and differences in humans will also be discussed. Methods available for enhancing or controlling reproductive processes in mammals will be discussed including the use of artificial insemination, estrous synchronization, embryo transfer, and reproductive biotechnology. The effects of environment, nutrition, and disease will also be examined for their influences on reproduction.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 3100 with a C- or higher or consent of instructor

ANSCI 3130 Animal and Food Microbiology 4 Credits

Students will learn about the basics of microbiology so as to better understand how control and use microbes in animal and food science. Topics include pathogens and disease control, rumen microbiology, udder health, food safety and food microbiology.

Components: Laboratory, Class

Prereqs/Coreqs: P. BIOLOGY 1150 or BIOLOGY 1650 AND CHEMISTRY 1050 or CHEMISTRY 1140 or consent of instructor

ANSCI 3200 Dairy Records Analysis 1 Credit

Students in this course will learn about a variety of computer software systems in use in the dairy industry and gain an understanding of how to analyze information collected from these systems to make effective management decisions.

Components: Class

Prereqs/Coreqs: P. ANSCI 1000, sophomore standing, or consent of instructor

ANSCI 3300 Livestock Production for Niche Markets 3 Credits

Participants in this course will explore opportunities and challenges facing producers raising food animals for niche markets. Species specific animal management and performance considerations will be explored. Regulations pertaining to livestock products commonly produced for niche markets will be presented and marketing strategies used by niche producers will also be considered.

Components: Class

Prereqs/Coreqs: P. Student must have completed 45 credits prior to starting this course

ANSCI 3750 Animal and Dairy Science Internship 3-6 Credits

Supervised experiential learning opportunities in collaboration with animal science industries and public agencies.

Components: Field Studies

Prereqs/Coreqs: P. 45 credits completed or IP and 12 credits of ANSCI completed or IP and good standing, and approval of internship coordinator

ANSCI 3800 Cheese Making 101 3 Credits

This is a laboratory-based course that provides hands-on experiences in cheese making and builds a strong cheese making foundation. Students will learn the fundamentals of safety in dairy processing, milk composition and processing, cheese manufacturing science, and principles of moisture and pH. This course is designed for students interested in getting some hands-on experiences and learning the science of cheese making.

Components: Laboratory, Class

ANSCI 3900 Ice Cream 101 1 Credit

This course will investigate the elements of the manufacture of various flavors of ice cream including the safety and sanitation of manufacture. This course is designed for students interested in learning more about the making and business of ice cream manufacture and the dairy industry.

Components: Laboratory

ANSCI 4030 Beef Management 4 Credits

Management principles of beef production including selection, feeding, marketing, reproduction, and promotion.

Components: Class, Laboratory

Prereqs/Coreqs: P. ANSCI 3000 and (ANSCI 3030 or BIOLOGY 3330) and ANSCI 3110 or consent of instructor

ANSCI 4040 Swine Management 4 Credits

The management principles and practices of the pork industry which include selection, feeding, breeding, reproduction, housing, disease control, and handling are discussed and demonstrated. The student is introduced to the organizational structure, economic realities and production trends current in the industry.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 3000 and (ANSCI 3030 or BIOLOGY 3330) and ANSCI 3110 or consent of instructor

ANSCI 4070 Dairy Cattle Management 4 Credits

Principles and problems involved in dairy cattle management. Emphasis will be placed on actual involvement in making managerial decisions.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 3000 and (ANSCI 3030 or BIOLOGY 3330) and ANSCI 3110 or consent of instructor

ANSCI 4080 Ruminant Nutrition 3 Credits

Students will become familiar with the unique anatomy and physiology of the ruminant gastrointestinal tract. We will explore more deeply the nutrients, their assimilation and utilization, and situational factors that influence nutrient use and requirements in ruminant livestock. Students will practice formulating rations for cattle and examine the relative economy of various feedstuffs and formulation strategies in the management of dairy and beef herds.

Components: Class

Prereqs/Coreqs: P. ANSCI 3000 or consent of instructor

ANSCI 4090 Nonruminant Nutrition 3 Credits

Students will explore more deeply the nutrients, their assimilation and utilization, and situational factors that influence nutrient use and requirements in nonruminant livestock (primarily pigs and poultry). Students will practice formulating diets for pigs and poultry and examine the relative economy of various feedstuffs and formulation strategies in the management of herds and flocks.

Components: Class

Prereqs/Coreqs: P. ANSCI 3000 or consent of instructor

ANSCI 4150 Lactation Physiology and Management 4 Credits

In this course students will learn basic anatomy, physiology, endocrinology, and biochemistry of the mammary gland; factors affecting milk yield, composition and quality; and principles and mechanics of milking machines. Students will also evaluate farm records and procedures and make recommendations for improvement and management decisions.

Components: Class, Laboratory

Prereqs/Coreqs: P. ANSCI 3110 and ANSCI 3200 or consent of instructor

ANSCI 4170 Small Ruminant and Equine Management 4 Credits

Principles and practices involved in the production and management of horses, goats, sheep, and other relevant farm animals such as llamas and alpacas. Topics will include breed selection and genetics, nutrition, reproduction, and animal health including disease and parasite control, hoof care, and overall management of the flock or herd. The laboratory component will include field trips.

Components: Laboratory, Class

Prereqs/Coreqs: P. ANSCI 3000 and (ANSCI 3030 or BIOLOGY 3330) and ANSCI 3110 or consent of instructor

ANSCI 4200 Individual Study in Animal Science 1-3 Credits

Individual study of the literature and research in specialized areas of the animal sciences.

Components: Independent Study

ANSCI 4260 Companion Animal Care and Management 3 Credits

Basic principles and practices of companion animals will be discussed. Application of knowledge and theories to actual case studies will be expected. A service learning project will be required of each student. Topics include defining companion animals, feeding and nutrition, reproductive biology, animal behavior and health.

Components: Class

Prereqs/Coreqs: P. ANSCI 3000 and ANSCI 3110 or consent of instructor; Emphasis in Pre-Vet or Vet Tech required

ANSCI 4300 Pioneer Dairy Challenge 1 Credit

The focus of the course is to give students experience with on farm consulting in the dairy industry including evaluation of financial records, rations, herd management records, and physical space. Students will learn from industry professionals and faculty about making realistic recommendations for overall improvement of farm operations.

Components: Laboratory

Prereqs/Coreqs: P. consent of instructor

ANSCI 4960 Special Topics in Animal Science 1-3 Credits

Discussion of contemporary topics relevant to the field of Animal Science.

Components: Independent Study

ANSCI 4980 Undergraduate Research in Animal Science 1-3 Credits

Students conduct research projects with faculty in Animal Science.

Components: Research

ANSCI 4990 Capstone Symposium in Animal Science 1 Credit

This course is designed to give the students an opportunity to showcase their capstone experiences. These experiences could include internships, study abroad, undergraduate research, special topics course, or field experiences. This symposium will serve as an outreach to lower level Animal Science majors as well as the faculty and staff of the School of Agriculture and various community partners and industry professionals.

Components: Class

Prereqs/Coreqs: P. ANSCI 2990 and consent of instructor