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
GE: Entry Level requirement
Prereqs/Coreqs: P: Freshman Standing (less than 30 credits)

ANSCI 1200 Livestock Production Techniques 2 Credits
The performance and management skills necessary to manage productive livestock enterprises. Students will learn techniques necessary in production agriculture.
Components: 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 2010 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 2030 Introduction to Food Science 3 Credits
The organization and structure of the nation's food industry. The nature and value of the major food groups, physical and chemical properties of various foods, processing technology, food safety, and quality assurance.
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: Laboratory, Class

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
This course will introduce students to the science and practice of animal nutrition. Students will begin to explore the nutrients of feeds, 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 1000, 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 CHEMISTRY 1050 or CHEMISTRY 1140

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 1350 or BIOLOGY 1650 and Math 1530 or higher

ANSCI 3040 Principles of Meat Science 3 Credits
Structure and composition of skeletal and connective tissue; muscle biology; post mortem changes affecting meat quality and characteristics.

Components: Laboratory, Class
Prereqs/Coreqs: P ANSCI 1000, CHEMISTRY 1050 or CHEMISTRY 1140

ANSCI 3070 Biotechnology in Animal Science 3 Credits
Principles of current methodologies utilized in biotechnology and the specific application to areas of animal science will be presented.

Components: Class

ANSCI 3110 Reproductive Physiology of Domestic Animals 4 Credits
This course discusses the anatomy, physiology and basic endocrinology of the reproductive processes in domestic livestock, companion animals, and poultry. 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 2010 with a C- or higher or consent of instructor

ANSCI 3120 Topics in Animal Health 3 Credits
Discuss animal diseases specific for this area along with diseases controlled by government regulations. Discuss biosecurity as related to global, national, regional and local animal health and agriculture. Guest speakers will be invited who are experts in dealing with zoonotic diseases and public health issues.*

Components: Class
Prereqs/Coreqs: P ANSCI 2010 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 2040; Dairy Science majors only

ANSCI 3600 Feeds and Feeding 3 Credits
This course is designed to complement material covered in ANSCI 3000 (Animal Nutrition). Through the course, students will become familiar with 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, BIOLOGY 1150 or BIOLOGY 1650 with a C- or better, and either CHEMISTRY 1050 or CHEMISTRY 1140 with a C- or better, P or C: ANSCI 3000 or consent of instructor
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 4030 Beef Management 4 Credits
Management principles of beef production including selection, feeding, marketing, reproduction, and promotion.
Components: Laboratory, Class
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 and ANSCI 3600 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 and ANSCI 3600 or consent of instructor

ANSCI 4120 The Animal Rights and Animal Welfare Social Movements 3 Credits
Students will learn about the past and present actions of the animal rights and animal welfare movements and will be expected to theorize using facts on what the future may hold if each movement continues ahead. Emphasis will be placed on class debates, mature discussions/interactions, fact-finding assignments and a major project researching individuals that have been influential to either movement or how they have impacted the opposing movement.
Components: Discussion, Class
Cross Offering: AGBUS 4120
Prereqs/Coreqs: P. Junior standing

ANSCI 4140 Meat Processing 3 Credits
This course is an advanced meat science course in which students will be expected to use their basic meat science knowledge and apply it to the production of further-processed, value-added meat products (i.e., sausages, bacon, hams). In addition to advanced meat processing skills, students will be expected to follow and adhere to HACCP and SSOP food safety standards in the production of the various products.
Components: Laboratory, Class
Prereqs/Coreqs: P. ANSCI 3040 or instructor consent

ANSCI 4150 Biology of Lactation 3 Credits
Basic anatomy, physiology, endocrinology, and biochemistry of the mammary gland; factors affecting milk yield and composition; diseases and abnormalities of the mammary gland; and principles and mechanics of milking machines.
Components: Class
Prereqs/Coreqs: P. ANSCI 3110 or consent of instructor
ANSCI 4160 Advanced Nutrition Consulting 3 Credits
Application of basic nutrition principles to case studies including ration evaluation/formulation, species specific feeding strategies, and on-farm diagnostics. Students will spend a day with a nutrition consultant to understand their daily activities.
Components: Laboratory, Class
Prereqs/Coreqs: P: ANSCI 3000

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
This course is a supplement to ANSCI 4070 (Dairy Cattle Management). 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: ANSCI 2040 and ANSCI 4070, C: ANSCI 4070

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: Independent Study
Prereqs/Coreqs: P: ANSCI 2990 and consent of instructor