ANIMAL AND FOOD SCIENCES

Animal science focuses on the science and business of the production of beef cattle, dairy cattle, horses, poultry, sheep, goats, swine, and pet/companion animals. An animal scientist is concerned with the application of the principles of the biological, physical, and social sciences associated with domestic animal production and management. Sustainability of livestock production systems is critical to feed the world safe, high-quality protein. Thus, meat production is a critical component of animal sciences.

The food industry is one of the largest and most important industries in the United States. Food scientists are concerned with the processing, safety, quality, and marketing of food, as well as the research and development of new products or improved processes to feed the continued growing world's population.

Undergraduate students may elect to pursue a Bachelor of Science degree in the department by majoring in either animal science or food science. Internship programs providing one to six months of off-campus work experience are available in all animal science options and are part of the curriculum for food science. Participation in undergraduate organizations (Leaders of Excellence in Animal and Food Sciences, Block and Bridle, Dairy Science, Horsemen's Association, Food Science Club, Meat Science Association, Oklahoma Collegiate Cattlewomen, Oklahoma Collegiate Cattlemen, Pre-Vet Club, Swine Club), judging teams (dairy cattle, horses, livestock, meat, or meat animal evaluation) and academic programs (honors, undergraduate research scholars, and academic quadrathlon) improve social, communication, leadership and academic skills and abilities.

Animal Science

Within the Animal Science major undergraduate students elect one of four options (predefined emphasis areas) of study: 1) General Animal Science, (2) Business/ Pre-Law, 3) Pre-Veterinary/ Pre-Medical, 4) Production and Operations. In addition, students have an opportunity to concentrate their studies on one or more animal species.

Students interested in veterinary medicine may complete the pre-veterinary medicine requirements at the same time they are working toward a BS degree in Animal Science. In addition, pre-vet students gain valuable insight into the care and management of domestic animals throughout the Animal Science curriculum.

Undergraduate students follow a similar curriculum during the first two years which includes basic courses in the physical, biological, and social sciences, and a series of introductory courses in agriculture and business. Upper-class students take a basic core of advanced Animal Science courses, including anatomy and physiology, genetics, reproductive physiology, and nutrition. As seniors, students complete a series of advanced Animal Science courses designed to apply knowledge obtained in previous courses to livestock systems. Every opportunity is taken to utilize the excellent herds and flocks owned or operated by the department.

Students completing an Animal Science degree have a wide choice of challenging careers, including ownership or management of farms, ranches or feedlots; employment with state and federal agencies concerned with inspection, grading or regulation; banking and financial activities, sales and service positions with companies involved with feeds, pharmaceuticals or other animal products; biotechnology; opportunities in Agricultural Extension or teaching; and work in the processing, distributing and merchandising of dairy, poultry and meat products. In addition, students have an opportunity to pursue advanced degrees in animal science or other professional degrees, including veterinary medicine, human medicine, dentistry, pharmacy, and law.

Minor in Animal Science

As a supplement to their chosen major, Animal Science coursework required for the minor will provide students with the knowledge to be competitive and succeed in the animal agriculture industry. The requirements include ANSI 1023 and ANSI 1021 Introduction to the Animal Sciences and 18 additional hours of Animal Science courses the student can select to personalize their programs. The basic core of advanced Animal Science courses includes anatomy and physiology, genetics, reproductive physiology, and nutrition. Students can then take advanced Animal Science courses designed to apply knowledge obtained in previous courses to animal systems.

Food Science

Food Science is an applied field. A food scientist is someone who applies the basic sciences: biology, physics, chemistry, and mathematics to further their understanding of the factors that affect food quality, safety, and nutrition. Food science is applied to the selection, preservation, processing, packaging, distribution, and use of safe, nutritious, and wholesome foods.

There are four study emphasis areas within the food science major: Science, Industry, Meat Science and Food Safety.

The Science emphasis gives students a well-rounded background in chemistry, physics, mathematics, and biology as well as Food Science. Students who elect this emphasis area usually have a primary interest in science and will be prepared to enter graduate education programs in Food Science.

This Science emphasis is also an excellent choice for students interested in professional schools such as medical school, dental school, pharmacy, or physical therapy. Students who elect not to pursue a graduate degree or a professional degree are prepared to work in any facet of the food industry, especially those jobs focused on research, product development and food analysis.

The Industry emphasis provides a basic understanding of the chemical and physical processes of food processing. Students pursuing this option are prepared to enter food plant management, quality assurance, quality control, product development and sales.

The Meat Science emphasis provides a background knowledge and understanding in live animal production, slaughter and fabrication, and meat processing, along with a basic understanding of chemical and physical processes of meat production. Students pursuing this option are prepared to enter the meat industry working in quality assurance, slaughter/fabrication, meat processing, product development and sales.

The Food Safety emphasis provides knowledge and experience in food safety issues and practices affecting all sectors of the food industry from production agriculture to wholesale and retail distribution channels. Students pursuing this option are prepared to enter the food industry with expertise in food safety programs, auditing, and quality assurance.

Minor in Food Science

The minor includes the core courses in Food Science. Requirements include FDSC 1133 Fundamentals of Food Science and 17 additional

hours of Food Science courses the student can select from to personalize their programs. The core of Food Science courses includes food chemistry, food microbiology, quality control and food analysis. There are also courses in specialized areas (e.g., meat science, dairy products) for students interested those industries. Students can complete their program with advanced courses in these areas.

Undergraduate Certificates

Undergraduate students in any OSU major can participate in our Equine Enterprise Management Certificate Program. This certificate program gives students an education focused on equine while preparing them to be knowledgeable professionals in the horse industry through advanced training and hands-on learning. The program is designed to ensure students are career-ready by equipping them with the knowledge and skills necessary to enter the horse industry.

Students from any OSU major can complete our Food Safety Certificate Program. The certificate program participants receive hands-on regulatory and customer-driven food safety programs training to prepare them for careers in the food industry. Students will have the opportunity to receive six internationally recognized certificates on HACCP, FSMA, and audit programs as part of their coursework. The program is designed to provide the food industry well-trained, qualified quality assurance professionals.