Animal Science (ANSC)

animalscience.uconn.edu

5601. Experimental Design in Animal Science

Three credits. Prerequisite: Instructor consent.

Discussion of the basic principles of design and analysis for experiments in animal and food science. Both theory and practical application of designing experiments will be included. Emphasis is placed on data analysis using SAS, highlighting determination of the most appropriate analysis for an experiment and interpretation of output.

5612. Advanced Nutrition

Two credits. Prerequisite: Instructor consent.

Critical review of current literature on digestive physiology, metabolism, feed processing and management related to ruminant animals.

5613. Growth and Metabolism of Domestic Animals

Three credits.

An assessment of animal growth and metabolism interrelated to nutrition, selection, environment, production and idiosyncrasies among species.

5614. Advanced Animal Nutrition

Three credits. Prerequisite: Instructor consent.

A comparative study of nutritional, physiological, microbiological, immunological and biochemical aspects of digestion and metabolism in the non-ruminant and ruminant animal. Topics include digestive system structures, utilization of nutrients, energy metabolism, control of nutrient metabolism, and experimental techniques used in the study of animal nutrition. Feedstuffs appropriate to meet nutrient requirements and ration formulation across various physiological stages, growth, gestation, and lactation will be covered in this course. There will be a focus on developing critical thinking skills, reading current literature, and assimilating scientific concepts in written and oral forms.

5615. Comparative Exercise Physiology

Three credits.

In depth discussion of the effects of exercise on the body with emphasis placed on the physiological mechanisms which allow for adaptation to periods of exercise and inactivity. Idiosyncrasies among the athletic species will be highlighted.

5616. Endocrinology of Farm Animals

Three credits.

In depth discussion on endocrine systems and endocrine function in farm animals with emphasis on hormones involved in metabolism, growth, lactation, feed intake and digestion in cattle, pigs, horses and poultry.

5618. Probiotics and Prebiotics

Three credits.

Biology, uses, effectiveness and safety of probiotics and prebiotics. Molecular mechanisms underlying the health benefits attributed to the consumption of pre and probiotics. Application of pre and probiotics to promote human and animal health, including safety and regulation. A background in general microbiology or concurrent registration in a microbiology course is recommended.

5619. Signaling Pathways

Three credits. Recommended preparation: previous three credit course in cell biology, molecular biology, or biochemistry.

Principles of cell signaling transduction. Major cellular regulatory pathways and interactions between pathway components. Regulatory mechanism of various cellular processes via specific signaling network, and methods used for studying cell-signaling pathways.

5621. Frontiers in Animal Embryo Biotechnology

Three credits.

Focuses on the epigenetics and molecular aspects of embryology such as genomic imprinting and X inactivation. Introduces the state of numerous established and emerging embryo biotechnologies such as assisted reproductive technologies; gamete cryopreservation; transgenesis; nuclear transfer (cloning); gene targeting/genome editing; xenotransplantation; embryonic and tissue stem cells, induced pluripotent stem cells and their applications.

5623. Current Advances in Epigenetics

One credit. Prerequisite: Instructor consent. May be repeated for a total of three credits.

A field of modern biological research that is concerned with influences on gene expression, developmental biology, and disease that are mediated by mechanisms independent of DNA sequence. Literature review in which each student will present and critically analyze primary literature in epigenetics. All students will present and participate in detailed technical evaluations of selected papers, and develop a written proposal for future research based on the paper(s) that they present individually. Topics include imprinting, X chromosome inactivation, chromatin dynamics, and cloning (nuclear transfer).

5640. Animal Food Products: Dairy Technology

Three credits. Two class periods and one 2-hour laboratory or discussion period. Prerequisite: Instructor consent.

Production and processing of milk and milk products from a food science perspective, including chemical, physical, and microbiological components. Technological aspects of the transformation of milk into various food products. Public health regulations, good manufacturing practices, cleaning and sanitizing procedures. Unit operations in dairy food manufacturing, packaging, labeling, and quality control procedures.

5641. Food Chemistry

Three credits. Prerequisite: Instructor consent.

Chemical, physical and biological changes in foods and food macromolecules that occur during processing and storage that affect texture, color, flavor, stability and nutritive qualities. Field trips may be required.

5683. Graduate Teaching Experience

One credit. Prerequisite: Instructor consent. May be repeated for a total of three credits.

Mentored experience in developing and presenting lectures and/or laboratory activities for existing ANSC undergraduate courses.

5692. Research

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of 24 credits.

Independent research in animal science, livestock production, meats, dairy production, animal nutrition, growth, reproductive physiology, animal breeding, or environmental health.

5693. Graduate Presentation Skills

One credit. Prerequisite: Instructor consent.

Discussion-based class that prepares students to make oral presentations.

5694. Animal Science Seminar

One credit. Prerequisite: Instructor consent. May be repeated for a total of two credits.

Students present a seminar on the topic of their thesis research.

5695. Special Topics in Animal Science

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for a total of six credits. May be repeated for credit with a change of topic.

5699. Independent Study

Variable (1-3) credits. Prerequisite: Instructor consent. May be repeated for a total of 12 credits.