Animal Science (ANSC) Courses

ANSC1010 Introduction to Animal Science
This course explores how animals are utilized in agricultural production, recreation, and scientific research. Emphasis is placed on the variety of domesticated animal species used in modern agriculture, recreation, and scientific research. The role of animals in substantiable agricultural is examined. Students consider how animal welfare and animal rights topics influence the human animal relationship. Career opportunities in the animal science field are explored.
Prerequisite(s): Corequisite: ANSC1015.
Offered at Providence
3 Semester Credits

ANSC1015 Introduction to Animal Science Laboratory
This is a companion course to Introduction to Animal Science. Students expand their knowledge and develop skills in basic care requirements for domesticated and kept animals in agricultural, recreational, and scientific research facilities. The influence of domestication, living arrangements, and management practices on animal behavior is observed with multiple species including beef cattle, dairy cattle, equine, swine, sheep and goats, poultry, and research animal species. Sustainable practices for each facility type are examined. Students partake in hands-on experiences at a variety of selective facilities.
Prerequisite(s): Corequisite: ANSC1010.
Offered at Providence
1 Semester Credit

ANSC1050 Domestic Animal Anatomy and Physiology
This course covers the anatomy and physiology of domestic animals, based on cell, tissue, organ and system body structures. Species covered include companion animals in veterinary medicine and domesticated animals used in modern agriculture, recreation, and scientific research. Emphasis is placed on acquisition of a basic knowledge of anatomical structures, their operation and integration. Veterinary and anatomical nomenclature such as body planes and directional terms are studied. The following tissues and organ systems are covered: epithelium, connective tissue, blood and bone marrow, bone/cartilage, muscle tissue, nervous tissue, digestive system, circulatory system, reproductive, urinary system and respiratory system.
Prerequisite(s): Corequisite: ANSC1055.
Offered at Providence
3 Semester Credits

ANSC1055 Domestic Animal Anatomy and Physiology Laboratory
This course is a laboratory companion course coordinated with Domestic Animal Anatomy and Physiology lecture, which introduces domestic animal anatomy and physiology of the integumentary, skeletal, muscular, nervous, digestive, urinary and reproductive systems. This course explores anatomical structure and physiologic function through the use of anatomical models, dissection of mammalian specimens and examination/interpretation of diagnostic imaging commonly used in veterinary medicine. A regional/functional perspective is combined with a systemic overview of body systems and animal species comparisons. Skills essential to understanding the interrelationships between body systems, from molecular to organ levels, which are critical to the proper function of the dynamic animal body are applied.
Prerequisite(s): Corequisite: ANSC1050.
Offered at Providence
1 Semester Credit

ANSC2010 Principles of Animal Nutrition
This course focuses on nutrition of animal species used in modern agriculture, scientific research and companionship. Comparative digestive anatomy and the classes of nutrients including their digestion, use and sources are discussed. Nutrient requirements and feeding standards are explored. Feed requirements, laws and regulations, and labeling requirements are examined. Emphasis is placed on common feedstuffs and formulating rations and nutritional programs for animal enterprises.
Prerequisite(s): ANSC1050, ANSC1055.
Offered at Providence
3 Semester Credits

ANSC2030 Principles of Animal Behavior and Training
This course focuses on the application of ethology to understand and improve the systematic training of animals. This course examines animal behavior and the evolution of animal behavior. The communication process and techniques involving classical and operant conditioning are analyzed. Understanding aggression in animals and techniques to cope with aggression in animals are explored. Students are additionally introduced to and explore the various practices and techniques associated with animal training, with a particular emphasis placed on the skills necessary to train domestic and wild animals for husbandry, handling, and healthcare needs.
Offered at Providence
3 Semester Credits

ANSC3010 Animal Reproduction and Genetics
This course examines breeding methods and programs for domesticated animals. Reproductive anatomy, gestation and parturition of various animals are discussed. Students learn to develop a basic animal breeding program that considers Mendelian principles and ethical standards. Heritability and genetic diseases and disorders are researched within various animal populations. Advantages and disadvantages of different breeding methods and selection strategies are explored in this course in order for students to be well-versed in the history and current science of animal reproduction.
Offered at Providence
3 Semester Credits

ANSC3110 Animal Disease and Preventative Health
This course develops knowledge of the common diseases and disorders of animal species used in modern agriculture, scientific research and companionship. Fundamental principles in the transmission, pathogenesis, treatment and control of disease are covered. Identification of disease-producing organisms, signs of illness along with knowledge of vaccination and common disease management principles prepare the student to recognize and prevent health problems. Common pharmaceuticals, parasitology and anthelmintic programs are studied.
Prerequisite(s): ANSC1050, ANSC1055.
Offered at Providence
3 Semester Credits

ANSC3230 Animal Production and Management Laboratory
This course emphasizes how management practices influence animal production. Modeling production systems that maximize productivity while minimizing environmental impact is explored. Farm-to-table production channels/opportunities and specialty species for local, regional and national distribution are discussed. Students apply theories to a variety of animals including beef and dairy cattle, swine, sheep, goats and poultry. The course includes field trips where students experience topics covered in the course.
Prerequisite(s): Sophomore status.
Offered at Providence
1 Semester Credit

ANSC3350 Perspectives in Animal-Assisted Interventions
This course introduces students to the concepts and practices of Animal-Assisted Interventions (AAI), including Animal-Assisted Activities, Therapies and Education (AAA, AAT, AAE). Information regarding the history and evolution of the human-animal bond and the benefits of this relationship are explored. The role of pets and other animals in contemporary society and common uses of animals in therapeutic settings, as well as ethical concerns when working with animals are covered. The history of the use of animals for therapeutic purposes is reviewed and current scientific studies of AAI are examined and evaluated. Guest speakers and/or visits to therapeutic/training facilities helps provides students with firsthand experience and insight into the use of animals as therapeutic agents.
Offered at Providence
3 Semester Credits

ANSC4120 Animal Welfare, Health and Wellness
This course focuses on the basic principles, history and application of animal welfare science for multiple species. It is an introduction to the moral and ethical theories of animal rights and welfare. Students learn to assess the welfare of animals in a variety of settings using science-based methods and reasoning. Contemporary issues in animal welfare are explored, including understanding economic incentives to improve animal welfare and reduce economic losses in farm animals. Various means of measuring animal welfare are explored including health, productivity behavior and physiological responses.
Offered at Providence
3 Semester Credits

ANSC4230 Laboratory Animal Science and Management
This comprehensive course in laboratory animal science prepares students for employment as animal care and handling technicians or assistants in scientific laboratories or biotech companies under the supervision of a scientist or lab manager. The course is designed to cover the educational materials necessary for the Assistant Laboratory Animal Technician (ALAT) and Laboratory Animal Technician (LAT) certification exams offered by the American Association of Laboratory Animal Science (AALAS), providing students pathways to establish careers in laboratory animal sciences. Topics covered include laboratory animal husbandry, handling, health and welfare practices. Basic laboratory animal facility administration, safety and management concepts, as well as best practices in research methodology are investigated. Career opportunities in laboratory animal care are explored.
Prerequisite(s): ANSC1050, ANSC1055, BIO1022, BIO1026.
Offered at Providence
3 Semester Credits

ANSC4410 Special Topics in Animal Science I
This course is designed to allow students to pursue advanced work in specialized animal and veterinary science topics; examples of potential topics: Advanced Animal Behavior and Training Techniques, Techniques in Veterinary Practice, and Animal Facilities Management Strategies. The course may be a combination of practical applications of knowledge and advanced research. All potential topics must be presented for faculty approval. Final presentation is required.
Offered at Providence
1 Semester Credit

ANSC4440 Special Topics in Animal Science II
This course is designed to allow students to pursue advanced work in specialized animal and veterinary science topics; examples of potential topics: Advanced Animal Behavior and Training Techniques, Techniques in Veterinary Practice, and Animal Facilities Management Strategies. The course may be a combination of practical applications of knowledge and advanced research. All potential topics must be presented for faculty approval. Final presentation is required.
Offered at Providence
3 Semester Credits

ANSC4470 Special Topics in Animal Science III
This course is designed to allow students to pursue advanced work in specialized animal and veterinary science topics; examples of potential topics: Advanced Animal Behavior and Training Techniques, Techniques in Veterinary Practice, and Animal Facilities Management Strategies. The course may be a combination of practical applications of knowledge and advanced research. All potential topics must be presented for faculty approval. Final presentation is required.
Offered at Providence
1 Semester Credit