

ANIMAL SCIENCES (ANSC)

Visit the [Course Schedule Search website](#) to find out when courses will be offered during the academic year.

Read more about the courses within this subject prefix in the descriptions provided below.

ANSC 401 - Animals and Society

Credits: 0 or 4

Through an interdisciplinary and historical lens, students delve into the interaction and interdependence of animals and people, the changes and patterns over time, and the resulting implications for the animal industry and the quality of life for animals, people, and the planet. Topics covered include agricultural production, organic farming, sustainability, global agriculture, Community Supported Agriculture (CSAs), research, nutrition, food safety, genetics, animal health, aquaculture, animal welfare, breeding, recreation, companionship, and the reproduction of domestic animals. What are the major changes in meat consumption by humans? What is the effect of these changes on the environment and large and small farm operations? What are the effects of biotechnological research performed on animals for human benefits? What is the difference between animal welfare and animal rights? Why should we care? In what ways does this affect us?

Attributes: Biological Science(Discovery); Discovery Lab Course

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 402 - Horsemanship Lab

Credits: 1

For beginning, intermediate, and advanced riders. Lab (lesson) format with required co-requisite (hybrid or on-line). Correct position and technique for dressage and combined training with application of appropriate theory. Allow time before and after lab for horse care. For the safety of horse and rider, there is a rider weight limit of 200 pounds for all mounted activities in the UNH Equine Program, including ANSC 402.

Repeat Rule: May be repeated for a maximum of 8 credits.

Grade Mode: Credit/Fail Grading

Special Fee: Yes

ANSC 406 - Careers in Animal Science

Credits: 1

Students explore a variety of career opportunities within the fields of biotechnology, agriculture, animal science and veterinary medicine. Through class presentations and guest speakers students will learn about steps they could take to enhance their prospects for career success, including the internships, career related employment, research, and study abroad opportunities. Students will also prepare a draft and final resume, articulate a career plan, and write reviews about each of the guest speakers and panelists.

Grade Mode: Letter Grading

ANSC 419 - Horse Power

Credits: 4

Students explore the enduring bond between the horse and man and the effect of that bond on civilization by considering: How has the horse and man's use of the horse shaped civilization and contributed to societal change? How has the progress of civilization and societal change affected the horse and its role in society? What does our use of the horse say about us as individuals and as a society? Cannot receive credit if credit received for ANSC 444B.

Attributes: Humanities(Disc)

Equivalent(s): ANSC 444B

Grade Mode: Letter Grading

ANSC 421 - Introduction to Animal Science

Credits: 4

This course provides an overview of the scope and diversity of animal agriculture at the global, national and local levels. It also provides an introduction to the animal sciences through which students 1) learn basic animal science terminology 2) acquire an appreciation of the objectives of various animal enterprises and 3) gain understanding of contemporary trends, challenges and opportunities within animal agriculture.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 427 - Introduction to Equine Science

Credits: 4

This course familiarizes students with different aspects of equine management through practical work and a hands-on approach. Topics include selection, fit and care of English tack, bits, grooming, clipping, wound care, safe bandaging techniques, equine behavior, basic health care and monitoring, parasite control, and facility requirements and layout. Students will have hands-on work experience in the UNH stable for a total of 16 hours for the semester. Responsibilities include feeding, cleaning, turnout, and basic care of the University herd.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 500 - Equine Assisted Services

Credits: 4

Comprehensive examination of Equine Assisted Services including types of therapeutic riding and its physical, cognitive, and emotional benefits for clients with a variety of disabilities. Topics include hippotherapy, therapeutic riding, equine-facilitated mental health, youth at risk, therapeutic vaulting, carriage driving, equipment needs/modifications, special considerations for selecting and training the therapy horse, and the role of the volunteer therapist and instructor. Students have the opportunity to work with horses and riders in the UNH Therapeutic Riding Program during labs, as well as view other programs on mandatory field trips.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 511 - Animal Anatomy and Physiology I**Credits:** 0 or 4

This course focuses on the presentation and discussion of vertebrate (primarily mammalian) anatomic forms and physiologic processes. Lectures are heavily devoted to examining molecular, cellular, tissue, organ, and systems physiology while labs provide the opportunity to correlate this information with investigation of anatomic structures. The course includes an introduction to anatomic terminology and exploration of the mechanisms of major processes and the systematic aspects of the integumentary, musculoskeletal, reproductive, and digestive systems.

Prerequisite(s): (BIOL 411 with a minimum grade of D- or BIOL 411H with a minimum grade of D- or BIOL 413 with a minimum grade of D-) and (BIOL 412 with a minimum grade of D- or BIOL 412H with a minimum grade of D- or BIOL 414 with a minimum grade of D-).

Mutual Exclusion: No credit for students who have taken BMS 507.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 512 - Animal Anatomy and Physiology II**Credits:** 0 or 4

This course focuses on the presentation and discussion of vertebrate (primarily mammalian) anatomic forms and physiologic processes. Lectures are devoted to examining molecular, cellular, tissue, organ, and systems physiology while labs provide the opportunity to correlate this information with investigation of anatomic structures and application to animal health. Content includes the major physiologic processes and anatomic aspects of the central and autonomic nervous systems; cardiovascular, respiratory, immune, lymphatic, urinary and endocrine systems, and special senses.

Prerequisite(s): (BIOL 411 with a minimum grade of D- or BIOL 411H with a minimum grade of D- or BIOL 413 with a minimum grade of D-) and ANSC 511 with a minimum grade of D-.

Mutual Exclusion: No credit for students who have taken BMS 508.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 515 - Explorations in Veterinary Medicine**Credits:** 2

This course will introduce the diversity of career paths available in veterinary medicine and aid students in understanding and preparing for the process of applying to veterinary school. Students will also be exposed to current, significant challenges in the US veterinary medical field and will gain hands-on experience in the UNH PAWS veterinary clinic.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 522 - Ethical Horsemanship - Considerations and Theory**Credits:** 3

For riders of all levels who are enrolled in ANSC 402 for the first time AND for students wishing to learn the concepts of ethical horsemanship theory and practices without enrolling in horsemanship (riding) lab. Hybrid format, includes weekly face-to-face and online lectures/content with optional lab (ANSC 402). Use of an animal for purposes of sport and recreation is a privileged and optional activity, which is not necessary to human survival as the horse's traditional roles once were. Ethical use of the animal in such a context requires thorough knowledge and analysis of the horse's physical and psychological traits, as well as critical evaluation of the rider's goals and techniques in relation to the animal's needs and well-being.

Co-requisite: ANSC 402

Attributes: Writing Intensive Course

Equivalent(s): ANSC 405

Grade Mode: Letter Grading

ANSC 526 - Equine Conformation, Movement, and Performance**Credits:** 4

Unique among domesticated species, the horse's primary role is performance rather than food, fiber, or companionship. Although horses are inherently athletic, not all individuals have the same athletic ability, and even individuals with superior physical traits require athletic development to realize them in performance. This class will examine the interrelated concepts of equine conformation, movement, and performance with the goal of understanding the relationship between an animal's natural qualities, its fitness, its athletic potential, and its limitations.

Prerequisite(s): ANSC 437 with a minimum grade of D-.

Grade Mode: Letter Grading

Special Fee: Yes

ANSC 536 - Preparation and Competition Techniques for the Modern Sport Horse**Credits:** 4

Course addresses the safe handling and appropriate grooming and clipping techniques for modern sport horses as they are prepared for competition. Additional topics include trailering, studding, post-workout care and other industry skills. Students will evaluate selection and movement of sport-horses while in-hand and demonstrate knowledge by showing horses in best practice for the type and style. Students will demonstrate horse-handling proficiency while showing their assigned horse in-hand at the annual Little Royal Livestock & Horse Show. Lecture and lab format, including industry guest speakers and demonstration.

Prerequisite(s): (ANSC 427 with a minimum grade of D- or ANSC 437 with a minimum grade of D-) and (ANSC 522 with a minimum grade of D- or ANSC 422 with a minimum grade of D-).

Equivalent(s): AAS 536

Grade Mode: Letter Grading

ANSC 538 - Equine Handling/Longeing**Credits:** 1

This seven-week intensive course provides students with the opportunity to learn to longe a variety of University horses in an enclosed arena under private instruction. The emphasis is on safety and welfare of the horse and handler. Proper equipment and fit are addressed along with different training techniques used to improve the horse's quality of movement.

Equivalent(s): AAS 538

Grade Mode: Letter Grading

ANSC 543 - Technical Writing in Animal Sciences**Credits:** 2

Emphasis on writing scientific articles and articles for the end user on subjects pertaining to the animal science industry. Students are expected to make several oral presentations. Resume preparation is also included.

Attributes: Writing Intensive Course

Prerequisite(s): ENGL 401 with a minimum grade of D-.

Equivalent(s): ANSC 743

Grade Mode: Letter Grading

ANSC 548 - Agricultural Business Management**Credits:** 4

This course is designed to provide students with language, knowledge, techniques, and skills necessary for a career in the agriculture industry, specifically for agricultural service providers or farm business operators. Students will gain foundational context regarding agricultural and financial record keeping and building financial statements. They will then apply their knowledge in collaboratively developing a realistic, detailed whole farm record keeping plan and financial statement package for a model farm.

Equivalent(s): AAS 548, ANSC 635**Grade Mode:** Letter Grading**ANSC 600 - Field Experience****Credits:** 1-4

A supervised experience providing the opportunity to apply academic experience in settings associated with future professional employment and/or related graduate opportunities. Must be approved by a faculty adviser selected by the student. Permission of supervising faculty member required.

Repeat Rule: May be repeated for a maximum of 8 credits.**Grade Mode:** Credit/Fail Grading**ANSC 602 - Animal Rights and Societal Issues****Credits:** 4

To explore all aspects of human-animal interaction and welfare, emphasizing social, ethical, biological, historical and economic aspects of animal care and use.

Attributes: Writing Intensive Course**Equivalent(s):** ANSC 407**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 603 - Introduction to Livestock Management****Credits:** 4

This course explores the economic, scientific, and practical aspects of livestock management in New England, related to swine, beef, cattle, sheep, goats, and rabbits. This will include breed selection, feeding, reproduction, health, and housing systems. Product harvesting and food safety regulations related to sales and marketing are explored. Students will also be required to manage and care for a flock of sheep at UNH as part of their weekly laboratory exercises.

Prerequisite(s): ANSC 421 with a minimum grade of D-.**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 605 - Poultry Production and Health Management****Credits:** 4

This course focuses on understanding how the management practices used in raising domestic poultry can promote the production of healthy birds. Discussion centers on chickens in both large and small commercial flocks. Topics covered include breed and stock selection, anatomy & physiology, hatcher and brooder management, commercially important diseases, biosecurity and preventative health care, applicable food safety practices, and welfare. Students will gain hands-on experience working with live poultry during this course.

Grade Mode: Letter Grading**Special Fee:** Yes**ANSC 609 - Principles of Animal Nutrition****Credits:** 4

Applied animal nutrition and nutrient metabolism.

Prerequisite(s): CHEM 403 with a minimum grade of D- and CHEM 404 with a minimum grade of D- and ANSC 511 with a minimum grade of D-.**Grade Mode:** Letter Grading**ANSC 612 - Genetics of Animals****Credits:** 0 or 4

Application of the physical and chemical bases of heredity to the inheritance patterns and allele frequencies related to qualitative, quantitative, and sex-linked traits in animals. Overview of current genetic, genomic, and biotechnological applications to the health, behavior, and evolutionary relationships of domestic and wild animals.

Prerequisite(s): BIOL 411 with a minimum grade of C- or BIOL 411H with a minimum grade of C- or BIOL 413 with a minimum grade of C-.**Grade Mode:** Letter Grading**ANSC 622 - Further Explorations in Horsemanship Theory****Credits:** 2

For intermediate and advanced riders who have already completed ANSC 522. Online format, with required lab (ANSC 402) as a co-requisite. Students will use online content and independent study projects for in-depth explorations of more advanced topics related to the theory of dressage, jumping, and horsemanship, with particular attention to the application of correct theory to the individual rider's current skills, goals, and lab activities. May be repeated, with a different focus in subsequent semesters.

Co-requisite: ANSC 402**Prerequisite(s):** ANSC 522 with a minimum grade of D- or ANSC 405 with a minimum grade of D-.**Repeat Rule:** May be repeated for a maximum of 10 credits.**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 625 - Animal Diseases****Credits:** 4

This course focuses on concepts of animal health and disease primarily as they relate to domestic agricultural species. Basic principles of diagnosis, transmission treatment, and prevention are introduced and applied to the presentation of specific disease conditions. The course is divided into sections that focus on the primary body system that is affected by the disease or disorder and a heavy emphasis is placed on learning the skills necessary to recognize and prevent disease.

Prerequisite(s): ANSC 511 with a minimum grade of D- and ANSC 512 with a minimum grade of D-.**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 627 - Animal Health Applications****Credits:** 4

This course will use a case-based approach to integrate foundational concepts of animal anatomy and physiology with animal health and disease. Independent research of specific animal diseases cases will inform discussion of body systems in a variety of domestic animal species, targeting primarily farm animals, horses, dogs and cats. Hands-on laboratory experiences will use live domestic animals on campus to apply principles of disease diagnostics, prevention and treatment learned in class.

Prerequisite(s): ANSC 511 with a minimum grade of D- and ANSC 512 with a minimum grade of D-.**Grade Mode:** Letter Grading**Special Fee:** Yes

ANSC 640 - Principles of Riding Instruction**Credits:** 4

Introduction to the principles, theory and practice of Riding Instruction. Includes discussion of styles of learning and instruction as applied to a riding environment, student assessment, skill acquisition, lesson planning, horse selection and principles of group and private riding instruction. Students will use lab time to observe, assist and practice teaching in sections of ANSC 402, which will be matched according to their abilities and interests. Students will prepare for ARIA licensing examinations as part of class. Fall semester only. Lab.

Attributes: Writing Intensive Course**Prerequisite(s):** ANSC 522 with a minimum grade of D- or ANSC 405 with a minimum grade of D-.**Grade Mode:** Letter Grading**ANSC 641 - Principles of Dressage Instruction****Credits:** 2

Advanced principles and theory of dressage and advanced concepts in teaching and coaching dressage. Students will use lab time to observe, assist and practice teaching in dressage-only sections of ANSC 402. Students will prepare for ARIA licensing examinations as part of class. Spring semester only. Lab.

Prerequisite(s): ANSC 640 with a minimum grade of D-.**Grade Mode:** Letter Grading**ANSC 642 - Principles of Jumping Instruction****Credits:** 2

Advanced principles and theory of jumping and advanced concepts in teaching and coaching over fences in the arena and cross-country. Students use lab time to observe, assist and practice teaching in intermediate I and II level sections of ANSC 402. Lab. Offered spring semester of every odd numbered year.

Prerequisite(s): ANSC 640 with a minimum grade of D-.**Grade Mode:** Letter Grading**ANSC 643 - Principles of Therapeutic Riding Instruction****Credits:** 4

Principles and theory of teaching therapeutic riding, including special considerations of teaching in a therapeutic environment and methods of instruction for individuals with a variety of disabilities. Lab consists of observing, assisting and practice-teaching in UNH Therapeutic Riding Program as preparation for PATH International CTRI instructor certification. Spring semester only, biannually, odd numbered years.

Prerequisite(s): ANSC 500 with a minimum grade of D- and (ANSC 437 with a minimum grade of D- or ANSC 402 with a minimum grade of D-).**Grade Mode:** Letter Grading**ANSC 647 - Equine Stable Management****Credits:** 4

Students learn how to make equine management decisions based upon science and business principles through in-class/in-lab experiences, group exercises and hands-on experiences. Topics covered include evaluating health parameters, hoof care, vaccination and parasite control, nutrition, accurate record keeping, transportation, housing and business management. Management decision impacts will be evaluated over five management focal areas: business goals, horse health, clients, employees, and facilities. Students will have hands-on experiences using the university equine herd.

Prerequisite(s): ANSC 427 with a minimum grade of D-.**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 650 - Dairy Industry Travel Course****Credits:** 1

Extended field trip (5-6 days) to a variety of dairy farms and dairy related businesses with students and faculty from other New England land grant universities. Includes discussion sessions, case study, problem solving, and journal report. Additional travel costs may vary based on location of the extended field trip, which can include New England or other regions of the US and Canada.

Repeat Rule: May be repeated for a maximum of 2 credits.**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 665 - Agricultural & Equine Event Design, Planning and Management****Credits:** 2

This course provides students with theory and hands-on involvement in the organizational process of planning, managing and executing an agricultural event. Topics include budgeting, logistics, working with forms, sponsorship, publicity, prizes & awards with a focus on facilities, risk, volunteer, and personnel management. Throughout the course, students will apply real-world problem-solving skills and decision-making techniques. Fall semester the class meets for the 1st half and Spring semester, the 2nd half of the term.

Grade Mode: Letter Grading**ANSC 670 - Exotic Companion Species Health and Management****Credits:** 4

This course focuses on concepts of health and disease as they relate to companion zoological species (i.e. exotic pets and those species kept in small, living collections) management. Developing an understanding of species specific needs and utilizing this knowledge to promote physical and mental health in a captive environment will be core themes of the course. Previous coursework in animal anatomy & physiology recommended.

Prerequisite(s): (BIOL 411 with a minimum grade of D- or BIOL 411H with a minimum grade of D- or BIOL 413 with a minimum grade of D-) and (BIOL 412 with a minimum grade of D- or BIOL 412H with a minimum grade of D- or BIOL 414 with a minimum grade of D-).**Grade Mode:** Letter Grading**ANSC 690 - Livestock and Wildlife in Namibia: Challenges, Opportunities and Geography****Credits:** 4

This course explores the economic, historic, geographic, scientific and cultural aspects of livestock and wildlife management in Namibia. Its people developed unique models of conservation, as alternatives to national parks and private land in managing wildlife and livestock. Students will gain insight into this unique country and its animals, through lecturers, research, writing and direct interaction with practitioners in the study abroad component.

Attributes: World Cultures(Discovery); Writing Intensive Course**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 695 - Supervised Teaching Experience****Credits:** 1-2

Participants are expected to perform such functions as leading discussion sections, directing and assisting in laboratories, and assisting students with their problems in courses that participants have completed successfully. Enrollment is limited to juniors and seniors who have a minimum 3.00 cumulative average.

Repeat Rule: May be repeated for a maximum of 4 credits.**Grade Mode:** Credit/Fail Grading

ANSC 698 - Cooperative for Real Education in Agricultural Management (CREAM)**Credits:** 4

CREAM (Cooperative for Real Education in Agricultural Management) is a 2-semester course in which students perform the work and make the financial management decisions associated with the CREAM dairy herd. Students assume complete responsibility for the management and care of the 25-cow herd for the entire academic year. CREAM provides students with a unique experiential learning model that will help them understand how to work together to manage and operate a small business, the decision-making skills required in production agriculture and the application of science to the management of a dairy herd. Two semesters of 4 cr. each are required.

Repeat Rule: May be repeated for a maximum of 8 credits.**Equivalent(s):** AAS 275, ANSC 615**Grade Mode:** Letter Grading**ANSC 701 - Physiology of Reproduction****Credits:** 4

Comparative aspects of embryology, anatomy, endocrinology, and physiology of reproduction. Lab.

Grade Mode: Letter Grading**ANSC 704 - Advanced Equine Physiology and Lameness****Credits:** 4

This course will provide the student with an overview of equine specific anatomy and physiology through the context of important pathologic equine conditions. This course focuses on the major causes of lameness in horses and the process of diagnosing and treating them. Students will work through clinical cases in a discussion format to determine the cause of the lameness and develop treatment plans for each case.

Prerequisite(s): (ANSC 511 with a minimum grade of D- and ANSC 512 with a minimum grade of D-) or (BMS 507 with a minimum grade of D- and BMS 508 with a minimum grade of D-).

Grade Mode: Letter Grading**ANSC 710 - Dairy Nutrition****Credits:** 4

Feeding management of dairy cattle. Emphasis on feedstuffs, nutritional requirements, and diet formulation for efficient production and optimum health.

Prerequisite(s): ANSC 609 with a minimum grade of D- or NUTR 750 with a minimum grade of D-.

Grade Mode: Letter Grading**ANSC 715 - Physiology of Lactation****Credits:** 4

Examines the biological and biochemical influences of the lactation process. Emphasis on the physiological effects of environments, hormones, and nutrition on milk synthesis and secretion, mammary physiology, and maternal response.

Prerequisite(s): ANSC 511 with a minimum grade of D-.

Grade Mode: Letter Grading**ANSC 724 - Reproductive Management and Artificial Insemination****Credits:** 0 or 4

Focus on goals and fundamentals of reproductive management of horses, dairy and livestock animals, and through actual experience, development of competency in performing modern breeding techniques for equine and bovine reproduction. Lab.

Prerequisite(s): ANSC 511 with a minimum grade of D-.

Equivalent(s): ANSC 652**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 727 - Advanced Dairy Management I****Credits:** 4

Advanced management evaluation of milking procedures, reproduction, genetics, herd health, feeding, housing, and milking systems.

Equivalent(s): ANSC 615**Grade Mode:** Letter Grading**ANSC 728 - Advanced Dairy Management II****Credits:** 4

Advanced management evaluation of record keeping, financial and business management, personnel management, waste management, and marketing.

Attributes: Writing Intensive Course**Grade Mode:** Letter Grading**Special Fee:** Yes**ANSC 750 - Collaborative Farm Design and Development****Credits:** 4

As a semester long group project, students will design an economically feasible, fully operational, diversified small farm. Students will need to consider site selection, infrastructure, equipment, labor, animal production and health, financing options, marketing and sales, etc. in their design. The final project will be presented in both an oral and a written format. Independent initiative and group collaboration are both integral to success in this project.

Attributes: Writing Intensive Course**Grade Mode:** Letter Grading**ANSC 795 - Investigations****Credits:** 1-4

Investigations in genetics, nutrition, management, diseases, histology, equestrian management/agribusiness, physiology, cell biology, microbiology, dairy management, or teaching experience.

Repeat Rule: May be repeated for a maximum of 4 credits.

Equivalent(s): ANSC 795W**Grade Mode:** Letter Grading**ANSC 795W - Investigations****Credits:** 1-4

Investigations in genetics, nutrition, management, diseases, histology, equestrian management/agribusiness, physiology, cell biology, microbiology, dairy management, or teaching experience.

Attributes: Writing Intensive Course

Repeat Rule: May be repeated for a maximum of 4 credits.

Equivalent(s): ANSC 795**Grade Mode:** Letter Grading**ANSC 797 - Equine Capstone Experience****Credits:** 4

This course allows students to review critical professional skills, concepts and theories necessary for success within the equine industry and then to demonstrate competence in these areas, to a panel of equine program faculty. Students also coordinate logistics and content of an outreach Equine Education Day. Successful completion allows students to showcase professional skills and abilities to the non-academic equestrian community.

Prerequisite(s): ANSC 796 with a minimum grade of D-.

Grade Mode: Letter Grading

ANSC 799 - Honors Senior Thesis

Credits: 1-4

Independent research culminating with a written honors thesis in A) Genetics; B) Nutrition; C) Management; D) Diseases; E) Histology; F) Light Horsemanship; G) Physiology; H) Cell Biology; I) Microbiology; J) Dairy Management.

Attributes: Honors course; Writing Intensive Course

Repeat Rule: May be repeated for a maximum of 8 credits.

Grade Mode: Letter Grading