

346. Project Site Design
Winter. 4(1-6) L A 341.

Application of site planning principles and landscape design methods to representative site development projects, with emphasis on housing and recreational requirements and opportunities.

348. Public Site Design
Spring. 4(1-6) L A 346.

Application of site planning principles and landscape design methods to comprehensive site development projects, with emphasis on public and institutional requirements and opportunities.

353. Planting Plans
Spring. 4(2-4) Junior majors.

Principles and procedures for selection and arrangement of plant materials for specific uses, including climate modification, spatial definition, circulation control, and soil and water conservation, as expressed by planting plans and specifications.

370. History of Environmental Development
Fall. 3(2-2)

Significant natural conditions and cultural events which have influenced attempts to organize and design the physical environment, as expressed in historic landscape development styles and movements.

390. Landscape Architecture Field Studies
Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 8 credits. Approval of school.

Field trips to contemporary and historical site and regional zones within or outside the United States. Prior and post study required.

401. Landscape Management
Winter. 3(3-0)

Concepts and policies affecting natural resource conservation, selection and location of significant human use areas, landscape development considerations and their environmental implications.

403. Urban Design Theory
Winter. 3(3-0)

Concepts and procedures for the organization, design and development of public and private urban forms and spaces, including survey of urban elements, cultural, ecological and aesthetic considerations, and interdisciplinary collaboration.

423. Professional Graphics
Spring. 4(1-6) L A 321.

Applications of advanced sketching, perspective and rendering techniques for typical professional presentations, including prints, reproductions, photography and multi-media audiovisual communications.

437. Design Implementation
Winter. 4(1-6) Senior majors, L A 480 concurrently.

Preparation of a complete package of contract documents for a representative site development project, including typical construction drawings, specifications and cost estimates.

442. Comprehensive Landscape Design
Spring. 6(1-10) L A senior major.

Applications of regional and urban design theory and landscape design methods to representative large scale regional and urban landscape development projects.

471. History of Landscape Architecture
Spring. 3(2-2)

Environmental design concepts and projects from 1850 to the present time, with emphasis on the development of the profession and practice of landscape architecture in the United States.

480. Professional Practice
Winter. 3(2-2) Senior majors, L A 437 concurrently.

Principles and procedures of professional landscape architectural practice, including ethics, client relations, registration, inter-professional collaboration and organization of operations for design implementation. Field trips required.

483. Landscape Architecture Seminar
Spring. 3(2-2) Senior majors.

Research presentation and discussion of significant current issues, trends, events and opportunities relating to contemporary theories and practices of landscape architecture.

489. Landscape Architecture Internship
Fall, Winter, Spring, Summer. 2(0-8) or 3(0-12) or 4(0-16) May reenroll for a maximum of 8 credits. Juniors, approval of school.

Supervised experience in approved public agencies and professional offices. Bi-weekly conferences.

490. Special Problems
Fall, Winter, Spring, Summer. 2 to 5 credits. May reenroll for a maximum of 12 credits. Approval of school.

Investigation, for advanced undergraduate students in landscape architecture, developed from special interest areas.

499. Landscape Architecture Design Thesis
Fall. 4(0-8) L A Senior major.

Demonstration of analytical, creative and technical competencies in the development of methods and/or concepts leading to design solutions for contemporary landscape architecture problems.

**VETERINARY MEDICINE V M
(COLLEGE OF)**

511. Introduction to Veterinary Medicine I
(V M 500A.) Fall. 2(2-0) First-term Veterinary Medicine students.

Species and breed identification, predisposition for specific diseases, basic care and feeding, restraint and handling of small domestic animals, unusual pets, and laboratory animals.

517. Perspectives in Veterinary Medicine
Fall. 1(1-0) First-term Veterinary Medicine students.

Ethical principles, historical background and organization of the veterinary profession.

521. Introduction to Veterinary Medicine II
(500B.) Spring. 4(3-4) Third-term Veterinary Medicine students.

Restraint, physical examination and diagnostic procedures in food animals and horses. Fundamentals of equine conformation, gaits, shoeing and routine medical care.

531. Animal Behavior
(500E.) Spring. 3(3-0) Third-term Veterinary Medicine students.

Emphasis on behavior of animals relating to disease prevention and treatment. Lectures, discussions and demonstrations on veterinary ethology including animal communications, reproduction, restraint, handling, housing and feeding habits.

540. Metabolic Diseases and Endocrinology
(503.) Winter. 2(2-0) Fifth-term Veterinary Medicine students.

Biochemical and physiological basis of metabolic and endocrine diseases of animals including diagnosis, treatment and management.

542. Principles of Radiology
Fall. 2(2-0) Fourth-term Veterinary Medicine students.

Fundamentals of veterinary radiography. Normal radiographic anatomy. Principles of radiographic interpretation. Radiation safety.

544. Veterinary Epidemiology
Fall. 4(4-0) Fourth-term Veterinary Medicine students.

Meaning and relevancy of biostatistics in veterinary medicine. Descriptive and inferential statistics. Study design and critical literature review. Disease determinants, ecology, distribution and populations at risk. Analytic-clinical investigative epidemiology.

550. Preventive Veterinary Medicine and Public Health
(520.) Winter. 4(4-0) Fifth-term Veterinary Medicine students.

Public health aspects of veterinary medicine. Preventive and regulatory medicine including meat and milk hygiene, water supply and treatment, solid and liquid waste treatment and disposal and zoonosis.

560. Urinary System
(507.) Spring. 3(3-0) Sixth-term Veterinary Medicine students.

Normal and abnormal structure and function, diagnostic methods, and the medical and surgical manipulation of the urinary system.

561. Core of Medicine Laboratories I
Spring. 2(0-6) Sixth-term Veterinary Medicine students.

Classification diagnosis and treatment of diseases of the urinary, hematopoietic, nervous, integumentary and visual systems of animals.

562. Hematopoietic System
(509.) Spring. 2(2-0) Sixth-term Veterinary Medicine students.

Normal structure and function of the hematopoietic system and pathophysiological effects of hematopoietic diseases. Clinical manifestations, laboratory evaluation and medical management.

563. Visual System
(532.) Spring. 2(2-0) Sixth-term Veterinary Medicine students.

Methods of examination, diagnosis, and treatment of ocular diseases.

564. Survey of Infectious Agents
(510.) Spring. 4(4-0) Sixth-term Veterinary Medicine students.

Host-microorganism relationship in diseases of animals; laboratory diagnosis, treatment, control, and public health significance.

Descriptions - Veterinary Medicine

of

Courses

566. Nervous System

(512.) Spring. 3(3-0) Sixth-term Veterinary Medicine students.

Normal and abnormal neural structure and function in animals with emphasis on clinical neurology and neuropathology.

568. Integumentary System

(524.) Spring. 3(3-0) Sixth-term Veterinary Medicine students.

Diseases of the integumentary system of animals with emphasis on laboratory examinations, interpretations of pathological features, diagnosis and treatment.

570. Principles of Anesthesia

Fall. 2(2-0) Seventh-term Veterinary Medicine students.

Principles and techniques of administering anesthetic agents. Supportive care including fluid therapy. Emergency procedures. Euthanasia agents.

571. Core of Medicine Laboratories II

Fall. 1(0-3) Seventh-term Veterinary Medicine students.

Classification, diagnosis and treatment of diseases of the cardiovascular, respiratory and digestive systems of animals. Preanesthetic and anesthetic procedures and skills.

572. Cardiovascular System

(513.) Fall. 3(3-0) Seventh-term Veterinary Medicine students.

Pathogenesis, diagnosis, and management of cardiovascular diseases of animals. Anatomical, physiological, pathological and pharmacological principles providing basis for medical and surgical treatment. Diagnostic and surgical procedures and radiologic interpretation.

574. Respiratory System

(515.) Winter. 4(4-0) Eighth-term Veterinary Medicine students.

Pathogenesis, diagnosis, and management of respiratory diseases of animals; anatomical, physiological and surgical treatments. Diagnostic and surgical procedures and radiologic interpretation.

576. Digestive System I

(522.) Fall. 4(4-0) Seventh-term Veterinary Medicine students.

Pathogenesis, diagnosis, and treatment of diseases of the alimentary tract and digestive organs of small animals.

578. Principles of Surgery I

Fall. 3(2-3) Seventh-term Veterinary Medicine students.

Fundamentals of surgery. Common procedures used in soft tissue surgery with small animals.

580. Theriogenology

(516.) Fall. 6(5-3) Seventh-term Veterinary Medicine students.

Reproductive function and diseases of animals' genital structure and function and endocrine controls. Examination, diagnosis and treatment of the mammary gland and reproductive tract.

581. Core of Medicine Laboratories III

Winter. 3(0-9) Eighth-term Veterinary Medicine students.

Diagnosis and treatment of diseases of the reproductive, digestive and musculoskeletal systems.

582. Musculoskeletal System I

(526.) Winter. 3(3-0) Eighth-term Veterinary Medicine students.

Diagnosis and treatment of musculoskeletal diseases of animals with emphasis on pathological changes, radiological techniques, and interpretation of radiographs.

586. Digestive System II

Winter. 4(4-0) Eighth-term Veterinary Medicine students.

Pathogenesis, diagnosis and treatment of diseases of the alimentary tract and digestive organs of food animals and horses.

588. Principles of Surgery II

Winter. 3(2-3) Eighth-term Veterinary Medicine students.

Fundamental large animal surgery. Surgical techniques and management of animals before, during and after surgery.

590. Client Communication and Jurisprudence

(501.) Spring. 2(2-0) Ninth-term Veterinary Medicine students.

Communication and interviewing skills for effective client relations. Communication aspects of medical records and their use in medical problem solving. Legal responsibilities of the veterinary medical profession.

591. Core of Medicine Laboratories IV

Spring. 2(0-6) Ninth-term Veterinary Medicine students.

Diagnosis and treatment of common toxicologic conditions, musculoskeletal disorders and orthopedic conditions in animals.

592. Musculoskeletal System II

(534.) Spring. 4(4-0) Eighth-term Veterinary Medicine students.

Diagnosis, prognosis and management of musculoskeletal diseases of large animals. Anatomical relationships of normal to abnormal function. Surgical procedures applicable to the equine and ruminant. Radiographic diagnosis and interpretation of various lameness conditions.

594. Veterinary Toxicology

(530.) Spring. 4(4-0) Ninth-term Veterinary Medicine students.

Pharmacological basis and pathological features of diseases of animals caused by common toxic chemicals with emphasis on clinical manifestations, diagnosis, prevention, and treatment.

596. Diseases of Bones and Joints

(536.) Spring. 3(3-0) Ninth-term Veterinary Medicine students.

Anatomy and pathophysiology of diseases of bones and joints. Diagnosis, prognosis and treatment of abnormalities involving bones and joints.

602. Veterinary Practice Management

Spring. 2(2-0) Ninth-term Veterinary Medicine students, approval of college.

Establishment of a veterinary practice.

610. Veterinary Externship

Fall, Winter, Spring, Summer. 8 to 16 credits. May reenroll for a maximum of 16 credits. Veterinary Medicine students; completion of preclinical courses and approval of college. Students may not receive credit in both VM 610 and LSM 674.

Clinical or research experience in an off-campus setting.

ZOOLOGY

ZOL

College of Human Medicine College of Natural Science

203. Resource Ecology

(IDC 200.) Fall, Winter, Spring, Summer. 3(3-0) Interdepartmental with the departments of Fisheries and Wildlife, Forestry, Geography, and Resource Development. Administered by the Department of Fisheries and Wildlife.

Basic concepts of ecology which are the unifying basis for resource management, conservation policy and the analysis of environmental quality. Extensive use of guest lecturers.

301. Nature and Homo Sapiens

Spring. 4(2-6) Three terms of natural science; not open to zoology majors.

Relates humans to their natural environment. Chief emphasis on identifying characteristic animal life in broad areas of nature and how humans fit or misfit into these. Lectures, laboratory and field trips illustrate this relationship.

302. Vertebrate Life of the Past

Fall. 3(3-0) One course in physical or biological science or Juniors. Interdepartmental with and administered by Geology.

Fossil vertebrates from fish to humans.

303. Introductory Animal Systematics

Fall. 5(5-0) B S 212.

General survey of animals including origin, evolution and dispersal, morphological characteristics, reproductive patterns, behavior, ecology and zoogeography of invertebrates and vertebrates.

304. Biology, Behavior and Humans

Winter. 3(3-0) Juniors; not open to zoology majors.

Examines philosophical and biological issues which make the study of animal behavior relevant to humans. Emphasizes history of animal behavior, current theories, and experiments relating biological and environmental determinants of adaptive and non-adaptive behavior patterns.

313. Animal Behavior

(413.) Spring. 4(4-0) B S 211.

Description of the known behavior of the various vertebrate and invertebrate phyla with emphasis upon adaptive significance. Thus, special attention will be given to mating, defensive, and nutritive behavior. The genetics and ontogeny of behavioral patterns will be presented where known. Behavior will be related to the ecology of various animal populations.

317. Principles of Development

Fall, Spring. 3(3-0) B S 212.

Development of animals, especially vertebrates. Principles are illustrated by modern experimental studies of developmental problems.

318. Principles of Development Laboratory

Fall, Spring. 2(0-6) ZOL 317 or concurrently; B S 212.

Principles of development illustrated by analysis of the ontogeny of selected organisms.

320. Vertebrate Systematics Laboratory

Winter. 2(0-6) ZOL 303. Open to Zoology majors only; others: approval of department.

Systematics, morphology and natural history of vertebrate animals as illustrated by representative species within the seven classes.