

401. Regional Design Theory

Fall. 2(2-0)

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. 2(2-0)

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) 321.

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

430. Special Projects in Environmental Design

Summer. 5(2-6) 332, 345.

The improvement of man's physical environment as taught by a sequence of highly regarded professional practitioners and educators in the environmental design professions.

432. Site Engineering

Winter. 4(2-4) Senior majors and C E 251.

Principles and procedures for design of site development systems, horizontal and vertical road alignments, storm and sanitary sewers, site utilities and computer applications for preparation of site construction drawings.

441. Regional Landscape Design

Fall. 3(0-6) Senior majors and 401 concurrently.

Applications of regional design theory and landscape design methods to representative large scale land use and development projects, resource conservation, environmental restoration, and accommodation of various human activities. Field trips required.

443. Urban Landscape Design

Winter. 3(0-6) Senior majors and 403 concurrently.

Applications of urban design theory and landscape design methods to representative urban development projects, public plazas, pedestrian malls, civic and cultural complexes, etc., with written, oral and graphic representations. Field trips required.

451. Ecological Planting Design

Fall. 4(2-4) 250, 353 and HRT 211, 212.

Selection, utilization and arrangement of natural materials for various site development purposes, with emphasis on consideration of natural environmental factors which affect plant growth and location for distinctive sites and uses. Field trips required.

463. Architectural Design II

Fall. 4(1-6) 360, 362.

Design of buildings and their groupings in relation to the landscape, including structural systems, form-space compositions, and applications to representative landscape development projects. Field trips required.

471. History of Landscape Architecture

Fall. 3(3-0)

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(3-0) Senior majors.

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(4-0) Senior majors.

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

490. Special Problems

Fall, Winter, Spring, Summer. 2 to 5 credits. May re-enroll for a maximum of 8 credits. Approval of school.

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

499. Landscape Architecture Design Thesis

Spring, Summer. 5(1-8) Senior majors.

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

801. Graduate Landscape Architecture I

Fall, Winter, Spring, Summer. 5 to 12 credits.

A series of complex problems of variable subject matter adjusted to the interests and needs of each individual student and designed to emphasize the various phases of landscape architecture such as plant materials and planting design, drafting and delineation, surveying and construction, contracts, specifications and reports, architecture and city planning and landscape design.

802. Graduate Landscape Architecture II

Fall, Winter, Spring, Summer. 5 to 12 credits. 801.

Continuation of 801.

803. Graduate Landscape Architecture III

Fall, Winter, Spring, Summer. 5 to 12 credits. 802.

Continuation of 802.

804. Comprehensive Problem

Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 15 credits. 803.

Development of a terminal, creative project of subject matter selected by the student and approved by the department, involving the various phases of landscape architecture and submitted to the faculty as evidence of his mastery of the principles of his profession.

Seminars on professional speaking and writing research design and data interpretation, and client relations.

502. Nervous System and Epidemiology

Summer. 5(5-0) Fifth-term Veterinary Medicine students.

Normal and abnormal neural structure and function in animals with emphasis on clinical neurology and neuropathology. Principles of epidemiology and their application in the study of diseases in animal populations.

504. Urinary and Hematopoietic Systems

Summer. 7(5-6) Fifth-term Veterinary Medicine students.

Integrative approach to the understanding of the urinary system in health and disease of animals. Pathogenesis, diagnosis, and clinical management of diseases of the hemopoietic and lymphoid organs and tissues.

510. Survey of Infectious Agents

Fall. 4(4-0) Sixth-term Veterinary Medicine students.

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

512. Metabolic Diseases and Endocrinology

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

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

514. Cardiovascular and Respiratory Systems

Fall. 7(5-6) Sixth-term Veterinary Medicine students.

Pathogenesis, diagnosis, and management of cardiovascular and respiratory diseases of animals; anatomical, physiological, and pharmacological principles providing basis for medical and surgical treatment will be emphasized.

516. Reproductive System

Fall. 5(4-3) Sixth-term Veterinary Medicine students.

Reproductive diseases of animals with emphasis on genital structure and function, endocrine interrelationships, methods for examination of mammary gland and reproductive tract, diagnosis, and treatment.

518. Diagnostic and Surgical Procedures

Fall. 2(0-6) Sixth-term Veterinary Medicine student.

Demonstration and performance of some procedures applicable to nervous, reproductive, and respiratory systems.

520. Veterinary Public Health

Winter. 3(3-0) Seventh-term Veterinary Medicine students.

Public health aspects of veterinary medicine; the nature of laws, ordinances, and regulations; and veterinary medicine's role in the protection of the environment, ecology, and insurance of food hygiene.

522. Digestive System and Nutrition

Winter. 9(6-9) Seventh-term Veterinary Medicine student.

Pathogenesis, diagnosis, and treatment of diseases of the alimentary tract and digestive organs of animals. Recognition and rational therapy of nutritional diseases in animals.

VETERINARY MEDICINE V M

(College of)

500. Veterinary Medical Communication

Fall, Spring. 1(1-0) Admission to the professional veterinary program.

524. Integumentary System

Winter. 4(3-3) Seventh-term Veterinary Medicine students.

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

526. Musculoskeletal System I

Winter. 4(2-6) Seventh-term Veterinary Medicine students.

Diagnosis and treatment of musculoskeletal diseases of animals with emphasis on pathological changes, radiological technics, and interpretation of radiographs. Surgical procedures applicable to small animals will be demonstrated.

530. Veterinary Toxicology

Spring. 4(4-0) Eighth-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.

532. Visual and Auditory Systems

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

Methods of examination, diagnosis, and treatment of diseases involving the eyes or ears of animals with emphasis on the anatomical, physiological, and pathological features.

534. Musculoskeletal System II

Spring. 5(2-9) Eighth-term Veterinary Medicine student.

Diagnosis, prognosis, and management of musculoskeletal diseases of the equine with emphasis on anatomical relationships to normal and abnormal function. Surgical procedures applicable to equine and ruminant will be performed.

536. Orthopedic Surgery

Spring. 6(4-6) Eighth-term Veterinary Medicine students.

Principles of orthopedic surgery and anatomical relations of the musculoskeletal systems in the canine and feline.

538. Veterinary Medical History, Ethics, Jurisprudence, and Epidemiology

Spring. 2(2-0) Eighth-term Veterinary Medicine students.

Historical background, ethical principles, and legal responsibilities of the veterinary medical profession. Epidemiological problems will be resolved and discussed.

600. Veterinary Medical History, Ethics, and Jurisprudence

Fall, Spring. 1(1-0) Admission to the veterinary professional program.

Seminars on historical background, ethical principles, and legal responsibilities of the veterinary medical profession.

204. Natural History of Birds

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

Identification of Michigan birds in field and laboratory, including life histories, habits, and consideration of their economics, aesthetic and recreational value.

301. Nature and Man

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

Relates man to his natural environment. Chief emphasis on identifying characteristic animal life in broad areas of nature and how man fits or misfits 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 the Geology Department.

Fossil vertebrates from fish to man.

303. Introductory Animal Systematics

Fall. 4(4-0) B S 212. Not open to Zoology majors, except those working for teacher certification. LBC 344 concurrently.

A general survey of the animal kingdom. Topics include origin, evolution and diversity of invertebrate and vertebrate groups, their systematic and present status.

304. Biology, Behavior and Man

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

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

305. Biology of Vertebrates

Fall. 4(3-3) B S 212. Not suggested for students having previous experience in vertebrate taxonomy or morphology.

Primarily concerned with natural history of vertebrates. Topics include morphological characteristics, ecology, zoogeography, and taxonomy of vertebrate animal groups. Laboratory involves recognition of representative species within the various classes.

314. Comparative Anatomy of Vertebrates

(315.) Winter. 5(3-6) B S 212.

Comparative anatomy and evolution of vertebrates. The dogfish and a mammal dissected in the laboratory.

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) 317 or concurrently; B S 212.

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

341. Human Heredity

Fall, Winter, Spring, Summer. 4(3-3) Three terms of Natural Science; Sophomores; not open to zoology majors. Students may not receive credit in more than one of the following: 341, 441, 459.

Inheritance of human, physical, physiological, and psychological traits, and forces that influence human evolution. Foundation is laid on which applications of heredity in fields of education, sociology, anthropology, psychology, dentistry, and medicine must rest. Course includes field trips to state institutions.

344. Introductory Animal Systematics Laboratory

Fall. 1(0-3) 303 concurrently. Interdepartmental with and administered by Lyman Briggs College.

Laboratory examination of form and function of representative vertebrate and invertebrate animals.

381. Fundamentals of Invertebrate Zoology

Winter. 4(3-3) B S 212.

Form and function of representative invertebrates. Meets requirements for a course in Invertebrate Zoology. Students expecting to obtain advanced degrees in Zoology or those more interested in a systematic or ecological approach should elect Zoology 481.

389. Animal Ecology

Spring. 4(3-4) B S 212 or concurrently.

Animals in relation to their environment. Factors affecting the distribution and abundance of animals. Interrelationships between climate, soils, vegetation, geologic history and animal life. Population characteristics as related to reproduction and mortality factors.

391. Zoological Problems

Fall, Winter, Spring, Summer. 1 to 8 credits. May re-enroll for a maximum of 12 credits. Juniors; B S 212; 6 credits in zoology; approval of department.

Advanced work in morphology, field zoology, genetics, mammalogy, ornithology, or ichthyology.

400H. Honors Work

Fall, Winter, Spring. Variable credit. Juniors.

401. Comparative Physiology I

Fall. 4(3-4) PSL 240 or B S 212 and CEM 132. Interdepartmental with and administered by the Department of Physiology.

A comparison of osmoregulation, digestion, respiration, and other physiological processes in a wide range of organisms.

402. Comparative Physiology II

Winter. 4(4-0) 401 or approval of department. Interdepartmental with the Department of Physiology.

A comparison of sensory, motor, endocrine and other integrative mechanisms in animals.

404. Biological and Ecological Concepts for Engineers and Mathematicians

Winter. 3(3-0) Approval of department. Interdepartmental with Systems Science.

Biological and ecological concepts important to formal analysis of living systems, vital properties, processes, and limitations; population dynamics, selection, competition, and predation; ecological community structure and function; industrialized ecosystem.

412. Principles of Animal Behavior

Summer. 4(4-0) For teachers of biology. Not applicable toward major in zoology.

Evolutionary, hormonal, and neurological bases of animal behavior.

ZOOLOGY

ZOL

College of Human Medicine

College of Natural Science

College of Osteopathic Medicine

200. Resource Ecology and Man

For course description, see Interdisciplinary Courses.