471. History of Landscape Architecture
Spring. 3(2-2)
Environmental design concepts and projects from 1850 to the present, with emphasis on the development of the profession and practices of landscape architecture in the United States.

480. Professional Practice
Spring. 3(2-2) 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
Winter. 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.

490. Special Problems
Fall, Winter, Spring, Summer. 2 to 5 credits. May re-enroll 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
Spring, Summer. 3(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.

Veterinary Medicine (College of) — Descriptions of Courses

500. Introduction to Veterinary Medicine I
(SSM 501) Summer. 2(2-0) Admission to professional veterinary program. Species and breed identification, predisposition for specific diseases, basic care and feeding, restraint and handling of small domestic animals, unusual pets, and laboratory animals.

501. Client Communication
(Spring) Spring. 1(0-2) Fourth-term Veterinary Medicine students.
Communication and interviewing skills as the basis for establishing and maintaining effective client relationships.

502. Introduction to Veterinary Medicine IV
(Spring) Spring. 4(3-3) Fourth-term Veterinary Medicine students.
Anesthetic principles, agents and techniques. Basic surgical principles, including aseptic technique, hemostasis, wound healing, suturing and suturing materials. Fundamentals of radiology.

503. Metabolic Diseases and Endocrinology
Summer. 2(2-0) Fifth-term Veterinary Medicine students.
Biochemical and physiological basis of metabolic and endocrine diseases of animals including diagnosis, treatment and management.

504. Veterinary Epidemiology
Summer. 2(2-0) Sixth-term Veterinary Medicine students.
Principles of epidemiology and their application in the study of diseases in animal populations.

505. Urinary System
Summer. 4(3-3) Fifth-term Veterinary Medicine students.
Integrative approach to the understanding of the urinary system in health and disease of animals.

506. Hematopoietic System
Summer. 2(1-3) Fifth-term Veterinary Medicine students.
Pathogenesis, diagnosis, and clinical management of diseases of the hematopoietic and lymphoid organs and tissues.

507. Survey of Infectious Agents
Fall. 4(4-0) Sixth-term Veterinary Medicine students.
Host-parasite relationship in diseases of animals; laboratory diagnosis, treatment, control, and public health significance will be emphasized.

510. Reproductive System
Fall. 4(3-3) 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.

512. Nervous System
Fall. 3(3-0) Sixth-term Veterinary Medicine students.
Normal and abnormal neural structure and function in animals with emphasis on clinical neurology and neuropathology.

513. Cardiovascular System
Fall. 4(3-3) Sixth-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—including diagnostic and surgical procedures and radiologic interpretation.

515. Respiratory System
Fall. 4(3-3) Sixth-term Veterinary Medicine students.
Pathogenesis, diagnosis, and management of respiratory diseases of animals; anatomical, physiological and surgical treatments—including diagnostic and surgical procedures and radiologic interpretation.

528. Musculoskeletal System II
Winter. 4(3-0) Seventh-term Veterinary Medicine students.
Diagnosis and treatment of musculoskeletal diseases of animals with emphasis on pathological changes, radiological techniques and interpretation of radiographs. Surgical procedures applicable to small animals will be demonstrated.

542. 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 I
Winter. 4(4-0) Seventh-term Veterinary Medicine students.
Diagnosis and treatment 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. 4(4-0) 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 are resolved and discussed.

A-195
341. Human Heredity
Fall, Winter, Spring, Summer. 4(3-3) Three terms of Natural Sciences; Sophomores, not open to zoology majors. Students may not receive credit in more than one of the following: 341, 441.
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. Students may not receive credit in both 381 and 303.
Form and function of representative invertebrates. For entrance to 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 491.

399. Animal Ecology
Winter. 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.

400H. Honors Work

401. Comparative Physiology I
Fall, 4(4-0) PS 210 or B.S 212 and CEM 132. Interdepartmental with and administered by the Department of Physiology.
A comparison of neuroregulation, 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.

408. Freshwater Ecology
Summer. 6 credits. B.S. 212 or approval of department. Geen at W. K. Kellogg Biological Station. Interdepartmental with Biological Science and the Department of Botany and Plant Pathology and administered by Biological Science.
The ecology of freshwater ecosystems, their basic structure, and the functional interrelationships of environmental variables regulating population dynamics, productivity and community structure. Extensive field investigations.

410. Terrestrial Ecology
Summer. 6 credits. B.S. 212 or approval of department. Geen at W. K. Kellogg Biological Station. Interdepartmental with Biological Science and the Department of Botany and Plant Pathology and administered by Biological Science.
Factors determining distribution and abundance. Interrelationships of plants, animals, and environment. Extensive field investigations of several types of terrestrial communities in the light of current theory.

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.

413. Animal Behavior
Spring. 4(4-0) B.S. 212.
Description of the known behavior of the various vertebrate and invertebrate phyla with emphasis upon adaptive significance. The 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.

414. Biological Mechanisms of Animal Behavior
Winter of odd-numbered years. 3(3-0) or 5(3-0) 413 recommended.
Consideration of neuronal and hormonal mechanisms controlling behavior. Emphasis will be upon mammalian systems, and will deal with the assumptions which underlie current concepts in the biology of behavior.

415. Ecological Aspects of Animal Behavior
Fall. 4(4-0) 413.
Consideration of orientation, navigation and homing behavior, food preferences, habitat selection, exploration, behavioral periodicity, communication, social organization and the embryology of behavior. In both vertebrates and invertebrates.

417. Advanced Developmental Biology
Spring. 3(3-0) or 5(3-0) 317. Molecular and cellular biology of development. Complementary laboratory exercises with emphasis on experiments.