

## Descriptions—Park, Recreation and Tourism Resources of Courses

### 890. Independent Study

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 7 credits in all enrollments for this course.

Supervised individual study in an area of parks, recreation, leisure, or tourism.

### 891. Selected Topics

Fall, Spring, Summer. 3 to 6 credits. A student may earn a maximum of 8 credits in all enrollments for this course.

Selected topics in park and recreation resources of current interest and importance.

### 892. Park and Recreation Resources Seminar

Fall, Spring. 1 to 2 credits. A student may earn a maximum of 2 credits in all enrollments for this course.

Current policy issues, problems and research in parks, recreation and tourism.

### 899. Master's Thesis Research

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to graduate students in Park and Recreation Resources. Approval of department.

### 923. Advanced Environmental and Resource Economics

Spring of even years. 3(3-0) Interdepartmental with Agricultural Economics; Economics; Forestry; and Resource Development. Administered by Agricultural Economics. P: (AEC 829 and EC 805)

Advanced economic theory of environmental management and policy. Treatment of externalities and market and non-market approaches to environmental improvement. Topics in conservation and sustainable economic growth. Applications to research and policy.

### 925. Environmental and Resource Economics Research

Spring of odd years. 3(3-0) Interdepartmental with Agricultural Economics; Forestry; Resource Development; and Economics. Administered by Agricultural Economics. P: (AEC 829 and EC 805)

Topics such as contingent or non-market valuation, institutional analysis, pollution prevention, environmental quality and location, recreational demand modeling, and environmental risk management. Research process in environmental and resource economics.

SA: AEC 991H

### 944. Advanced Research Methods

Summer. 3(3-0) P: PRR 844.

Applications of advanced and specialized research methods to problems in recreation and tourism. Measurement, sampling, and research design.

### 999. Doctoral Dissertation Research

Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to Ph.D. students in Park and Recreational Resources.

## PATHOLOGY

### Department of Pathology College of Veterinary Medicine

### 525. Neuropathology Problem Solving Exercises

Fall, Spring, Summer. 2(0-4) R: Open only to graduate-professional students in College of Human Medicine or Osteopathic Medicine.

Independent study of 24 neuropathology problem solving exercises.

### 542. Basic Principles of Pathology

Spring. 2 credits. R: Graduate-professional students in colleges of Human and Osteopathic Medicine.

Fundamental pathologic processes; clinical applications.

### 551. General Pathology

Spring. 3(2-2) R: Completion of 1 semester of the graduate-professional program in the College of Veterinary Medicine.

Host responses to injury, including cell degeneration, necrosis, disturbances of growth and development, neoplasia, circulatory disturbances and inflammation.

### 553. Clinical and Systemic Pathology

Fall. 5(4-2) R: Completion of 2 semesters of the graduate-professional program in the College of Veterinary Medicine.

Hematology. Pathology of hematopoietic, lymphatic, digestive, urinary, respiratory, integumentary, cardiovascular, nervous, reproductive, musculoskeletal, endocrine, ocular, and otic systems.

### 608. Pathology Clerkship

Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to graduate-professional students in College of Human Medicine or Osteopathic Medicine.

Anatomic and clinical pathology with emphasis on clinical-pathological correlation. Conducted in pathology departments of affiliated hospitals.

### 609. Laboratory Medicine Clerkship

Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 16 credits in all enrollments for this course. P: For graduate-professional students in College of Human Medicine: FMP 602, FMP 608, MED 608, PHD 600. For graduate-professional students in College of Osteopathic Medicine: Completion of Units I and II. R: Open only to graduate-professional students in College of Human Medicine or Osteopathic Medicine.

Laboratory procedures. Correlation of laboratory data with morphologic abnormalities in patients with pathophysiology.

### 630. Diagnostic Pathology Clerkship

Fall, Spring. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine. R: Not open to students with credit in PTH 651 or PTH 652.

Necropsy and surgical and clinical pathology. Interpretation of gross findings and laboratory data.

## PTH

### 631. Necropsy Clerkship

Fall, Spring. 3 credits. P: PTH 630. R: Completion of 5 semesters of the graduate-professional program in the College of Veterinary Medicine.

Supervised necropsy. Interpretation and presentation of findings.

### 632. Problems in Veterinary Pathology

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Completion of 5 semesters in the graduate-professional program in the College of Veterinary Medicine. Approval of department.

Supervised projects involving gross pathology, histopathology, clinical pathology, or molecular pathology.

### 633. Transfusion Medicine

Fall, Spring. 3 credits. R: Completion of 5 semesters of the graduate-professional program in the College of Veterinary Medicine.

Management of blood donors, blood banking, and cross match technologies. Administration of blood components. Blood typing in large and small animals.

### 812. Advanced Clinical Chemistry

Spring of even years. 2(2-0) Interdepartmental with Medical Technology. Administered by Medical Technology. P: BCH 462, MT 414, MT 416.

Biochemical basis of selected pathologic conditions including inborn errors of metabolism, endocrine and other genetic disorders. Emphasis on current diagnostic techniques.

### 820. Advanced Human Hematology

Fall of even years. 2(2-0) Interdepartmental with Medical Technology. Administered by Medical Technology. P: MT 422.

Selected topics in hematology including pathogenesis, mechanisms and morphological pictures. Emphasis on laboratory tests and interpretation of results.

### 830. Concepts in Molecular Biology

Spring of odd years. 2(2-0) Interdepartmental with Medical Technology. Administered by Medical Technology. P: One course in Biochemistry or concurrently.

Techniques and theories of molecular biology, nucleic acid synthesis and isolation, enzymatic digestion and modification, electrophoresis, hybridization, amplification, library construction, and cloning.

### 840. Advanced Hemostasis

Fall of odd years. 2(2-0) Interdepartmental with Medical Technology. Administered by Medical Technology. P: BCH 462, MT 422.

Physiology, pathophysiology, and laboratory evaluation of hemostatic disorders.

### 851. Advanced General Pathology

Fall of even years. 3(3-0) P: PTH 852 concurrently. R: Approval of department.

Fundamental concepts of cell injury, inflammation, and oncogenesis. Mechanisms of disease.

### 852. Advanced General Pathology Laboratory

Fall of even years. 1(0-2) P: PTH 851 concurrently.

Histopathologic and ultrastructural study of general morphologic patterns of inflammation cell injury and neoplasm.

**853. Advanced Systemic Pathology**  
*Spring of odd years. 4(3-2) R: Approval of department.*

Pathological aspects of the nervous, endocrine, cardiovascular, respiratory, urinary, genital, musculoskeletal, integumentary and special sense systems.

**854. Advanced Clinical Pathology**  
*Spring of even years. 3(3-0) P: PTH 540, PTH 552, PTH 609, PTH 651. R: Approval of department.*

Hematology including anemias, leukocyte responses and hemostasis. Clinical chemistry including tests to evaluate organs.

**855. Essentials of Scientific Communication**

*Fall of odd years. 2(2-0) R: Approval of department.*

Preparation, editing, and review of research manuscripts and grants. Critique of oral presentations. Illustrations of research data and thesis preparation. Philosophy and methods of research.

**857. Correlative Diagnostic Pathology**  
*Fall, Spring, Summer. 3(0-6) R: Approval of department.*

Diagnosis of animal diseases by necropsy, biopsy, or clinical pathology. Correlation of diagnostic test results with history, laboratory data and morphologic findings. Compiled and formal presentation of findings.

**858. Pathology of Avian Diseases**  
*Spring of even years. 2(2-0) R: Approval of department.*

An overview of disease and pathology affecting domestic poultry, pet birds, and wild birds.

**859. Avian Histopathology Laboratory**  
*Spring of even years. 1(0-2) R: Approval of department.*

Recognition and description of microscopic lesions of avian diseases.

**890. Problems in Veterinary Pathology**  
*Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of department.*

Faculty supervised work on an experimental, theoretical or applied problem in veterinary pathology.

**891. Problems in Pathology**  
*Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of department.*

Faculty supervised work on an experimental, theoretical or applied problem in pathology.

**892. Pathology Seminar**  
*Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. R: Approval of department.*

Presentation and discussion of current topics in pathology by departmental graduate students, faculty or outside speakers.

**899. Master's Thesis Research**  
*Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Approval of department.*

**901. Investigating the Lung**  
*Fall of even years. 3(3-0) Interdepartmental with Large Animal Clinical Sciences; and Physiology. Administered by Large Animal Clinical Sciences. R: Open only to M.S. and Ph.D. students in Large Animal Clinical Sciences, Small Animal Clinical Sciences, Physiology, and Pathology. Approval of department.*

Classic and current concepts of respiratory structure and function in health and disease. Mechanisms of lung injury.

**999. Doctoral Dissertation Research**  
*Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Admission to doctoral program in Pathology.*

## PEDIATRICS PED

### Department of Pediatrics College of Osteopathic Medicine

**590. Special Problems in Pediatrics**  
*Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 48 credits in all enrollments for this course. R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of department.*

Experimental, theoretical, or applied problems under faculty direction.

**600. Pediatrics Clerkship**  
*Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate-professional students in the colleges of Osteopathic Medicine and Human Medicine upon completion of Units I and II.*

Practical clinical exposure in the area of pediatrics.

**602. Primary Care Ambulatory Clerkship**  
*Fall, Spring, Summer. 1 to 36 credits. A student may earn a maximum of 36 credits in all enrollments for this course. Interdepartmental with Osteopathic Medicine; Internal Medicine; Osteopathic Surgical Specialties; Psychiatry; and Family and Community Medicine. Administered by Osteopathic Medicine. P: Successful completion of the preclerkship requirements in College of Osteopathic Medicine Units I and II.*

A 24-week ambulatory care continuity experience involving 12 weeks in a multidisciplinary environment (family medicine, pediatrics, and internal medicine), 6 weeks in family medicine and 6 weeks in specialty areas (internal medicine, surgery, and obstetrics and gynecology). Didactic sessions are scheduled concurrently.

**619. Ambulatory Care Clerkship**  
*Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 15 credits in all enrollments for this course. Interdepartmental with Family Practice; and Medicine. Administered by Family Practice. P: FMP 602. R: Open only to graduate-professional students in College of Human Medicine.*

Continuous and comprehensive patient care under supervision of appropriate physicians.

**620. Directed Studies**  
*Fall, Spring, Summer. 1 to 30 credits. A student may earn a maximum of 30 credits in all enrollments for this course. P: PED 600. R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of department.*

Study in general or specialty pediatrics.

## PEDIATRICS AND HUMAN DEVELOPMENT PHD

### Department of Pediatrics and Human Development College of Human Medicine

**523. Genetics for Medical Practice**  
*Summer. 1(1-0) Interdepartmental with Biochemistry. R: Graduate-professional students in colleges of Human Medicine and Osteopathic Medicine.*

Basic principles of genetics for medical students.

**524. Genetics Clinic**  
*Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P: PHD 523. R: Graduate-professional students in colleges of Human and Osteopathic Medicine.*

Role of genetics in health care delivery under the direction of a faculty member.

**591. Special Problems in Human Development**  
*Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Graduate-professional students in colleges of Human and Osteopathic Medicine.*

Work under the direction of a faculty member on an experimental, theoretical, or applied problem.

**600. Pediatric Specialty Clerkship**  
*Fall, Spring, Summer. 6 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course. R: Open only to graduate-professional students in College of Human Medicine. Completion of preclinical CHM curriculum.*

Multidisciplinary approach to children and their families in a health care setting. Integrated biological, behavioral, and clinical sciences in assessing and planning children's health care needs.