852*. Veterinary Necropsy Clerkship  
Fall, Spring, Summer. 2(1)  
P: Completion of Year 3 of the College of Veterinary Medicine. R: Year 4 College of Veterinary Medicine. Veterinary Medicine none.  
Supervised necropsy and interpretation of findings.

854*. Problems in Veterinary Necropsy Clerkship  
Spring. 2(1)  
P: Completion of Year 3 of The College of Veterinary Medicine. R: Year 4 College of Veterinary Medicine. Veterinary Medicine none.  
Problems related to necropsy and the interpretation of findings.

851*. Advanced General Pathology  
Fall. 3(0-0)  
P: Approval of Department  
Fundamental concepts of cell injury, inflammation, and oncogenesis; emphasis on mechanisms of disease.

852*. Advanced General Pathology Laboratory  
Fall. 1(0-0-2)  
Histopathologic and ultrastructural study of general morphologic patterns of inflammation cell injury and neoplasms.

853*. Advanced Systemic Pathology  
Spring. 4(2-1)  
P: 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 odd-numbered years. 2(0-0)  
P: Approval of department  

855*. Proseminar  
Summer of odd-numbered years. 2(0-0)  
P: Approval of Department  
Instruction in preparation and presentation of oral presentations. Discussion of research data. Preparation and editing of research data.

856*. Pathology  
Summer of even-numbered years. 2(0-0)  
P: Approval of Department  
Pathologic changes in tissues of animals used in toxicologic studies. Clinical pathologic assessments. Gross, histologic and ultrastructural changes in organ systems.

857*. Correlative Diagnostic Pathology  
Fall, Spring, Summer. 3(0-0-6)  
P: Approval of Department  
Diagnosis of animal diseases by necropsy, biopsy or clinical pathology; emphasis on correlation of findings with history, laboratory data and morphologic findings; completed and formal presentation of findings.

859*. Problems in Veterinary Pathology  
Fall, Spring, Summer. 2(0-0-2)  
P: Approval of Department  
Each student will work under the direction of a faculty member on an experimental, theoretical or applied problem in veterinary pathology.

891*. Problems in Pathology  
Fall, Spring, Summer. 1 to 2 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
Each student will work under the direction of a faculty member on an experimental, theoretical or applied problem in pathology.

892*. Pathology Seminar  
Fall, Spring. 1(0-0)  
P: Approval of Department  
Presentation and discussions by departmental graduate students, faculty or outside speakers on current topics in pathology.

899*. Master's Thesis Research  
Fall, Spring, Summer. 1 to 10 credits.  
P: Approval of Department  
Individual work on research problems for the masters degree in pathology.

999*. Doctoral Dissertation Research  
Fall, Spring, Summer. 1 to 12 credits.  
P: Admission to Doctoral Program in Pathology  
Individual research directed towards a dissertation for the doctoral degree in pathology.

PEDIATRICS AND HUMAN DEVELOPMENT  PHD

523. Genetics for Medical Practice  
Summer. 3(0-0)  
P: Approval of Department  
Preclinical instruction with the Department(s) of Biochemistry, Pathology, Radiology.  
R: Graduate-professional students in colleges of Human and Osteopathic Medicine.  
Basic principles of genetics for medical students.

524. Genetics Clinic  
Fall, Spring, Summer. 1 to 4 credits.  
P: PHD 523.  
Individual work on research problems for the masters degree in pathology.

591. Special Problems in Human Development  
Fall, Spring, Summer. 1 to 2 credits.  
P: Approval of Department  
May renovfor for a maximum of 2 credits.  
Special problems for the masters degree in pathology.

600*. Pediatric Specialty Clerkship  
Fall, Spring, Summer. 1 to 2 credits.  
P: Approval of Department  
Preclinical instruction with the Department(s) of Biochemistry, Pathology, Radiology, and Genetics.  
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.

601*. Human Development and Pediatric Sub-specialties(MTC)  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
Interdisciplinary with the Department(s) of Pediatrics, Pathology, and Psychiatry.

602*. Ambulatory Pediatrics  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
P: PHD 600.  
R: Open only to graduate-professional students in College of Human Medicine.  
Clinical experience in outpatient and community setting involving ongoing child health care.

603*. Pediatric Infectious Diseases Clerkship  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
P: PHD 600.  
R: Open only to graduate-professional students in College of Human Medicine.  
Clinical experience in infectious diseases.

604*. Neonatology  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
P: PHD 600.  
R: Open only to graduate-professional students in College of Human Medicine.  
Clinical experience in neonatal intensive care.

605*. Pediatric Cardiology Clerkship  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
P: PHD 600.  
R: Open only to graduate-professional students in College of Human Medicine.  
Clinical experience in cardiology.

606*. Pediatric Endocrinology and Metabolism Clerkship  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
P: PHD 600.  
R: Open only to graduate-professional students in College of Human Medicine.  
Clinical experience in endocrine and metabolic disorders.

607*. Pediatric Hematology and Oncology Clerkship  
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.  
P: Approval of Department  
May renovfor for a maximum of 12 credits.  
P: PHD 600.  
R: Open only to graduate-professional students in College of Human Medicine.  
Clinical experience in evaluating and managing pediatric patients with hematologic and oncologic disorders.
Courses are subject to revision and final approval.

DEVELOPMENT AND HUMAN DEVELOPMENT

608. Pediatric Pulmonary Disease Clerkship
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits. May reenroll for a maximum of 12 credits. P: PED 600. R: Open only to graduate-professional students in College of Human Medicine. Inpatient and outpatient clinical experiences relevant physiology, current research. Practice knowledge base for recognizing and dealing with individuals affected by substance abuse. Q: PED 600

609. Directed Studies
Fall, Spring, Summer. 2 to 24 credits. May reenroll for a maximum of 48 credits. 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. Q: PED 620

PHARMACOLOGY AND TOXICOLOGY

350. Introductory Human Pharmacology
Fall, Spring. 3(3-0). Pr: PSL 240, PSL 241 or concurrently R: Sophomores or higher. General principles, CNS and autonomic nervous system, cardiovascular and renal drugs; chemotherapy other selected basic pharmacology topics. Q: PHM 350

430. Drug Abuse
Fall of odd-numbered years. 3(3-0). R: Juniors and above. Lower classes-approved of Dept. Fundamentals of pharmacology, physiology and neuroscience for a basic understanding of the pharmacodynamics of drugs of abuse; survey of other aspects of drugs of abuse. Q: PHM 430

450. Introduction to Chemical Toxicology
Spring. 3(3). P: PS 110, 211 and 212; CEM 242 R: Juniors and above. Basic concepts of mammalian toxicology, including disposition of chemicals in the body, detoxication, elimination, and mechanisms of toxicity in major organ systems. Selected toxic agents discussed. Q: PHM 450

480. Special Problems
Fall of even-numbered years. 1 to 3 credits. May reenroll for a maximum of 9 credits. P: Approval of individual faculty member each term. Limited amounts of individual work on selected research problems for undergraduate students. Q: PHM 480

554. Veterinary Pharmacology and Toxicology I
Fall. 3(3-0). P: Completion of Year 1 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none. Drug absorption, distribution, biotransformation, elimination, receptor theory and pharmacogenetics; chemical toxicity; autonomic nervous system, cardiovascular and renal pharmacology. Q: PHM 554

555. Veterinary Pharmacology and Toxicology II
Spring. 3(3-0). P: Completion of Year 1 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none. Endocrine, antacid and central nervous system pharmacology; Endocrine, antacid, antibiotics, antihistamines, anticoagulants. Q: PHM 555

556. Veterinary Pharmacology
Fall. 5(5-0). P: Admission to the College of Veterinary Medicine. R: College of Veterinary Medicine Veterinary Medicine none. General principles of pharmacology (drug absorption, disposition, biotransformation, excretion, pharmacokinetics), pharmacologic agents of the autonomic nervous, cardiovascular, renal, central nervous, endocrine and gastrointestinal systems. Q: PHM 556

563. Medical Pharmacology
Summer. 3(3-0). R: Graduate-professional students in colleges of Human and Osteopathic Medicine. General principles of pharmacology and selected drugs. Rational drug therapy. Q: PHM 563

594. Veterinary Toxicology
Spring. 3(3-0). P: Completion of Year 2 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none. Pharmacological basis and pathological features of the influence of chemicals on the body systems with emphasis on clinical manifestations, diagnosis, prevention and treatment.