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: PHD 600. R: Open only to graduate-professional students in College of Human Medicine.
Inpatient and outpatient clinical experiences in evaluating and managing pediatric patients with pulmonary problems. Diagnostic procedures, clinically relevant physiology, current research.

PEDIATRICS PED

580*. ***Health Professionals' Role in the Treatment of Substance Abuse***
Spring. 1(01-00)
R: Open only to graduate and graduate-professional students in the colleges of Human Medicine, Nursing, and Osteopathic Medicine or approval of department.
Practical knowledge base for recognizing and dealing with individuals affected by substance abuse.
QA: PED 580

590*. ***Special Problems in Pediatrics***
Fall, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 8 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of department.
Experimental, theoretical, or applied problems under faculty direction.
QA: PED 590

600*. ***Pediatrics Clerkship***
Fall, Spring, Summer. 6 to 12 credits in increments of 6 credits.
R: Open only to graduate-professional students in the colleges of Osteopthic and Human Medicine. 2 years of medical school; approval of department.
Practical clinical exposure in the area of pediatrics.
QA: PED 600

620*. ***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.
QA: PED 620

PHARMACOLOGY AND TOXICOLOGY PHM

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

430*. ***Drug Abuse***
Fall of odd-numbered years. 3(3-0)
R: Juniors and above; Lower classes-approval 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.
QA: PHM 430

450*. ***Introduction to Chemical Toxicology***
Spring. 3(3-0)
P: BS 210, 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.
QA: PHM 450

480*. ***special problems***
Fall, Spring, Summer. 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.
QP: PHM 350 PHM 430 QA: 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.
QA: 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, antacoid and central nervous system pharmacology; chemotherapy; antimicrobials, antihelminthics, antineoplastics.
QA: 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 gastrointestional systems.

557*. ***Veterinary Toxicology***
Spring. 2(2-0)
P: Admission to the College of Veterinary Medicine. R: College of Veterinary Medicine Veterinary Medicine none
Principles of toxicology (determinants of toxic responses, analytical toxicology, genetic toxicology, toxin management); diagnosis, prevention, and treatment of common toxicoses.

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.

594*. ***Veterinary Toxicology***
Spring. 3(3-0)
P: Completion od Year 2 of the College of Veterinary Medicine. R: Year 3 College of Veterinary Medicine Veterinary Medicine none
Pharmacological basis and pathological features of diseases of animals caused by common toxic chemicals with emphasis on clinical manifestations, diagnosis, prevention and treatment.

810*. ***Synaptic Transmission***
Spring of odd-numbered years. 3(03-00)
R: Approval of Department
Major and electrical aspects of nerve impulse transmission at synaptic and neuroeffector junctions. Influence of drugs on these processes.
QA: PHM 810

813*. ***Cardiac Pharmacology***
Spring of even-numbered years. 3(03-00)
P: PHM 819, PHM 820 R: Graduate Students Approval of Department
Effects of drugs on normal physiological and biochemical processes in cardiac cells
QA: PHM 813

814*. ***Advanced principles of Toxicology***
Spring of even-numbered years. 3(03-00)
P: PHM 819 or equivalent
Biochemical, molecular and physiological mechanisms of toxicology; responses of major organ systems to chemical insult; mechansisms of mutagenesis and carcinogenesis.
QA: PHM 814

815*. ***Concepts in Tumorigenesis***
Spring of odd-numbered years. 2(02-00)
P: BCH 451, 452 and 453 or equivalent; PSL 431 432 and 433 or equivalent;
R: Approval of department
Examination and discussion of literature for each topic in tumorigenesis.
QP: PSL 433 BCH 453 QA: PHM 815

819*. ***Principle of Drug-Tissue Interactions***
Summer. 5(05-00)
R: Graduate Students Approval of department
Comprehensive overview of the important general principles necessary to understand the interaction of chmicals with biological systems.
QA: PHM 819

820*. ***Drug Actions, Effects and Uses***
Fall. 5(05-00)
P: PHM 819 R: Graduate Students Approval of Department
Comprehensive presentation of the major priciples of how the major drugs act physiologically and biochemically.
QA: PHM 821

827*. ***Advanced Neurobiology***
Fall. 4(04-00) Interdepartmental with the Department(s) of Zoology, Physiology,.
R: Graduate students Approval of department
Function of nervous system at cellular level: membrane biophysics and potentials, synaptic transmission.
QA: PHM 827

839*. ***Systems Neuroscience***
Spring of odd-numbered years. 4(04-00) Interdepartmental with the Department(s) of Anatomy, Physiology,.
R: Graduate students
Anatomy, pharmacology, and physiology of multicellular neural systems, including major sensory, motor, autonomic and chemo-regulatory systmes in brain of vertebrates.
QA: PHM 839