800. Problems in Pathology

Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. Approval of department.

Elective work for students in medicine interested in pathology as a specialty, or in the special pathology of diseases of a particular class or species, and for graduate students interested in pathological techniques or in nonthesis research.

801. Pathology Seminar

Fall, Winter, Spring. 1(1-0) May reenroll for a maximum of 3 credits for M.S. candidates and 6 credits for Ph.D. candidates. Approval of department.

Presentations and discussions by departmental graduate students, faculty or outside speakers on current topics in pathology.

802. Advanced Systemic Pathology I

Winter of even-numbered years. 4(3-3) Approval of department.

Histopathologic aspects of the digestive, respiratory and urinary systems. Pathogenesis related to morphologic change.

803. Advanced Systemic Pathology II

Fall of even-numbered years. 4(3-3) Approval of department.

Histopathologic aspects of the eye and ear and of the nervous, endocrine and integumentary systems. Pathogenesis related to morphologic change.

804. Oncology

Spring. 4(3-3) Approval of department.

Benign and malignant neoplasms with emphasis on gross and microscopic characteristics and diagnosis. Current concepts of oncogenesis and tumor therapy.

805. Pathology Proseminar

Fall. 2(2-0) Approval of department.

Instruction in preparation and presentation of seminars; philosophy and methods of research; theses and other research reports; literature review; illustration of research data; practical assignments.

806. Advanced General Pathology

Fall of odd-numbered years. 3(3-0) Approval of department.

Fundamental concepts of cell injury, inflammation and oncogenesis. Emphasis on molecular and biochemical mechanisms of pathologic processes.

806L. Advanced General Pathology Laboratory

Fall of odd-numbered years. 1(0-3) Approval of department, PTH 806 concurrently.

Histopathologic and ultrastructural study of morphologic patterns in inflammation, cell injury and neoplasia.

807. Advanced Systemic Pathology III

Winter of odd-numbered years. 4(3-3) Approval of department.

Histopathologic aspects of the cardiovascular, hemolymphatic, musculoskeletal and reproductive systems. Pathogenesis related to morphologic change.

808. Clinical Pathology Diagnosis

Spring. 3(0-9) Approval of department.

Diagnosis of animal diseases based on hematologic, cytologic and biochemical tests. Emphasis on the correlation of laboratory data with clinical history and physical findings.

810. Postmortem Diagnosis

Fall. 3(0-9) May reenroll for a maximum of 6 credits. Approval of department.

Diagnosis of animal diseases by means of necropsy and other laboratory techniques. Emphasis on correlation and interpretation of gross and microscopic lesions and results of other tests.

812. Advanced Human Hematology

Winter. 5(3-4) M T 407 or approval of department.

Selected topics in hematology including the pathogenesis, mechanisms and morphology of hematologic diseases in humans.

815. Histopathologic Diagnosis

Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits. PTH 802, PTH 803, PTH 804, PTH 810, approval of department.

Preparation, histopathologic examination, description, diagnosis and reporting of specimens from biopsy and necropsy.

818. Pathotoxicology

Summer of even-numbered years. 4(4-0) One graduate course in pathology or approval of instructor.

Pathologic changes in tissues of animals used in toxicologic studies. Clinical pathologic assessments. Gross, histologic and ultrastructural changes in organ systems.

820. Advanced Human Hematology

Fall of odd-numbered years. 2(2-0) M T 420, M T 421 or approval of department. Interdepartmental with and administered by Medical Technology Program.

Selected topics in hematology including the pathogenesis, mechanisms and morphological picture of hemotologic diseases in humans.

821. Advanced Veterinary Hematology

Spring of odd-numbered years. 4(3-3) Approval of department.

Current concepts in the pathogenesis, mechanisms and morphology of hematologic diseases of animal species.

822. Advanced Clinical Biochemistry

Spring of even-numbered years. 4(3-3) Approval of department.

Selected topics in clinical biochemistry, enzymology, immunopathology and related subdisciplines that focus on current technology used in the diagnosis of disease.

826. Laboratory Animal Pathology

Winter of even-numbered years. 4(3-3) Approval of department.

Gross, histologic, ultrastructural and clinicopathologic study of diseases of laboratory animals.

840. Advanced Hemostasis

Fall of even-numbered years. 2(2-0) M.S. candidates in Clinical Laboratory Science or approval of department. Interdepartmental with and administered by Medical Technology Program.

Physiology, pathophysiology and laboratory evaluation of hemostatic disorders.

899. Master's Thesis Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

901. Investigating the Lung

Fall of even-numbered years. 3(3-0) Approval of department. Interdepartmental with the departments of Large Animal Clinical Sciences, and Physiology. Administered by the Department of Large Animal Clinical Sciences.

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

990. Advanced Correlative Pathology

Fall, Spring. 5(1-15) Approval of department.

Compilation and formal presentation of the correlative findings of case material in anatomic and/or clinical pathology.

999. Doctoral Dissertation Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

PEDIATRICS PED

College of Osteopathic Medicine

580. Substance Abuse for Health Professional

Winter. 1(1-0) Student in the College of Human Medicine or College of Osteopathic Medicine.

Practical knowledge of ways to recognize and effectively deal with individuals affected by substance abuse.

590. Special Problems in Pediatrics

Fall, Winter, Spring, Summer. 1 to 8 credits. Approval of department.

Each student will work under direction of a faculty member on an experimental, theoretical or applied problem.

600. Pediatrics Clerkship

Fall, Winter, Spring, Summer. 8 credits. Grade P in all courses offered in terms 1 through 8 or approval of department.

Practical clinical exposure in the area of pediatrics. Program developed to achieve proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation, diagnosis, management and therapy.

620. Directed Studies

Fall, Winter, Spring, Summer. 2 to 24 credits. May reenroll for a maximum of 48 credits. PED 600 or approval of department.

Study in general or specialty pediatrics.

PEDIATRICS AND HUMAN DEVELOPMENT PHD

College of Human Medicine

520. Genetics Clinic

Fall, Winter, Spring, Summer. 1 to 3 credits. My reenroll for a maximum of 9 credits.

Students will interview and examine patients with inheritable disorders, perform related laboratory diagnostic procedures, and participate in genetic counseling conferences and discussions.

571. Infant through Adolescent Development and Genetics
Winter. 4(4-0) H M 570
Characteristics of physical, cognitive, language, social and emotional development, infancy through early adolescence. Genetic basis of development. Interaction of biologic, psychologic and social factors in the developmental process.

573. Behavioral Problems: Infancy through Adolescence
Fall. 3(3-0) H M 572. Interdepartmental with the Department of Psychiatry.
Origin, course and treatment of disorders of function and behavior in infancy through early adolescence commonly seen by physicians. Emphasis on role of development and biopsychosocial interaction.

590. Special Problems in Human Development
Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 12 credits. Human Medicine students or approval of department.
Each student will work under direction of a staff member on an experimental, theoretical or applied problem.

607. Ambulatory Care Clerkship
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 9 credits. FMP 602. Interdepartmental with the departments of Family Practice, and Medicine. Administered by the Department of Family Practice.
Outpatient experience, lasting an equivalent of 34 half-days and extending over a minimum of 26 weeks. Continuous and comprehensive patient care under supervision of appropriate physicians.

608. Pediatric Specialty Clerkship
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 43 credits. FMP 602.
Clinical experience with pediatric patients under the direction of members of the faculty of the Department of Human Development and community pediatricians. Fall, Saginaw. Winter, Lansing. Spring, Grand Rapids. Summer, Flint.

609. Human Development and Pediatric Sub-Specialties
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. PHD 608.
Elected experiences in selected clinical and basic sciences related to pediatrics and human development.

610. Ambulatory Pediatrics
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. PHD 608.
Clinical experience in outpatient and community settings involving ongoing child health care including chronic medical illnesses and common behavioral problems.

611. Infectious Diseases
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. PHD 608.
Combined office or clinic and inpatient experience in evaluating and managing pediatric patients with infectious diseases.

612. Neonatology
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. PHD 608.
Clinical experience involving modern neonatal techniques and care patterns for the sick neonate.

613. Pediatric Cardiology
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. PHD 608.
Office, clinic and hospital experience in diagnostic and therapeutic pediatric cardiology including special diagnostic procedures.

614. Pediatric Endocrinology and Metabolism
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. PHD 608.
Clinic and hospital experience in evaluating patients with endocrine and metabolic disorders.

615. Pediatric Hematology and Oncology
Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits. PHD 608.
Clinical experience in evaluating and managing pediatric patients with common hematologic and oncologic disorders.

PHARMACOLOGY AND TOXICOLOGY — PHM

College of Human Medicine
College of Osteopathic Medicine
College of Veterinary Medicine

350. Introductory Human Pharmacology
Winter, Spring. 4(4-0) PSL 432 or PSL 241 or concurrently; or approval of department.
General principles; central nervous system, autonomic nervous system, cardiovascular and renal drugs; chemotherapy; and other selected basic topics.

430. Drug Abuse
Fall of odd-numbered years. 4(4-0) Juniors or approval of department. Biology and chemistry recommended.
Actions, mechanism of action, toxicity and uses of drugs of abuse. Sociological and psychological aspects of drug abuse and the legal aspects of the sale and distribution of drugs are considered.

450. Introduction to Chemical Toxicology
Spring. 3(3-0) B S 210, B S 211, B S 212, CEM 242.
Potential risk of environmental chemicals to animal and human health.

480. Special Problems
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 9 credits. Approval of department.
Limited amounts of individual work on selected research problems for undergraduate students.

520. Medical Pharmacology I
Fall. 4(4-0) PSL 500A or PSL 500E; BCH 501 or BCH 512.
Drug absorption, distribution, biotransformation, elimination, antagonism; receptor theory and pharmacogenetics. Cardiac and renal drugs, pharmacology related to the autonomic nervous system.

521. Medical Pharmacology II
Winter. 4(4-0) PHM 520.
Pharmacology of the central and peripheral nervous systems. Chemotherapy: antineoplastic, antiviral and antimicrobial agents. Toxicology and emergency therapies. Endocrine and autacoid pharmacology.

554. Veterinary Pharmacology and Toxicology I
Fall. 4(4-0) PSL 500B, PSL 500C.
Drug absorption, distribution, biotransformation, elimination, receptor theory and pharmacogenetics; chemical toxicity; autonomic nervous system, cardiovascular and renal pharmacology.

555. Veterinary Pharmacology and Toxicology II
Winter. 5(4-2) PHM 554.
Endocrine, autacoid and central nervous system pharmacology; chemotherapy: antimicrobials, antihelminthics, antineoplastics.

582. Clinical Pharmacology Studies
Fall, Winter, Spring, Summer. 2(2-0) PHM 520 or approval of instructor.
Cases in clinical pharmacology.

810. Synaptic Transmission
Spring of odd-numbered years. 4(4-0) Approval of department.
Chemical and electrical aspects of nervous impulse transmission at synaptic and neuroeffector junctions and influences of drugs upon these processes. Intrinsic neuronal circuitry; reticular formation; thalamus; neocortex; cerebellum.

813. Cardiac Pharmacology
Winter of even-numbered years. 4(4-0) PHM 555 or PHM 521; PSL 801, approval of department.
Effects of drugs on normal physiological and biochemical processes in cardiac cells. Emphasis is placed on cell eletrophysiology and ion flux.

814. Advanced Principles of Toxicology
Spring of even-numbered years. 4(4-0) PHM 521 or PHM 555.
Current biochemical and physiological mechanisms of toxicity on major organ systems. Mechanisms of mutagenicity, carcinogenicity and teratology.

819. Principles of Drug-Tissue Interactions
Summer. 5(4-2) Approval of department.
Drug absorption, distribution, metabolism and excretion; drug-receptor interactions including methods for assessing receptor number and affinity; dose response relationships; pharmacokinetics; altered drug sensitivity and response; toxicology.

820. Advanced General Pharmacology
Fall. 3(2-2) PHM 520 or concurrently.
Discussions, demonstrations and laboratories designed to supplement information provided in PHM 520 on the pharmacokinetics and actions of drugs that influence the autonomic and cardiovascular systems.