411. Basic Histopathology  
Spring, 2(6-2) ANT 420, PSL 432; M T 410 or concurrently, Interdepartmental with and administered by Medical Technology.  
Microscopic examination of cell injury and death, inflammation and tissue repair. Pathologic tissue changes in diseases resulting from degenerative changes, abnormal metabolism, neoplasia, immunologic processes, infection, mechanical trauma and malnutrition.

501. Introduction to Human Pathology  
Spring, 2(1-2) Admission to the College of Human Medicine and ANT 543; or approval of department.  
Pathologic processes and specific disease syndromes with emphasis on clinical applications. Concepts of disease. Pathologic processes in selected common diseases or conditions.

502. Human Pathology I  
Winter, 2 to 5 credits. Admission to a college of medicine or approval of department. ANT 560 for College of Osteopathic Medicine students.  
Pathologic processes and specific disease syndromes with emphasis on clinical applications. Concepts of disease and pathologic process in selected common diseases or conditions for the beginning medical student with a limited knowledge of anatomy, physiology and biochemistry.

507. Human Pathology I  
Fall, 5(3-2) PTH 501.  
Diseases of the cardiovascular and endocrine system. Laboratory sessions will emphasize gross and microscopic morphology and clinical pathologic techniques.

508. Human Pathology II  
Winter, 4(3-0) PTH 501.  
Diseases of the respiratory, gastrointestinal, urinary and male reproductive systems. Laboratories will emphasize gross and microscopic study of lesions and a problem solving approach to disorders.

509. Human Pathology III  
Spring, 3(3-1) PTH 501.  
Diseases of the female reproductive system, bone, skin and blood forming organs. Laboratory sessions will emphasize gross and microscopic lesions.

510. Human Pathology IV  
Spring, 2(2-0) PTH 501.  
Diseases of nervous system and muscle. Problem solving exercises will be utilized.

525. Neuropathology Problem Solving Exercises  
Fall, Winter, Spring, Summer. 2(0-4)  
Medical student or approval of instructor.  
Independent study of 24 neuropathology problem solving exercises, including clinical history and brain specimens.

540. Introduction to Laboratory Medicine  
Spring, 2(1-2) ANT 551, PTH 501; SHT 652.  
Introduction to laboratory medicine leading to proficiency in patient evaluation and diagnosis through understanding of common pathologies and basic laboratory procedures in blood, urine and feces analysis.

550. Veterinary Pathology  
Fall, 5(3-4) Second year Veterinary Medicine students or approval of department.  
Principles of pathology, including causes of disease, disturbances of cell growth and metabolism, necrosis, circulatory changes, inflammation and neoplasia.

552. Veterinary Clinical Pathology  
Winter, 4(3-3) Fifth term Veterinary Medicine students or approval of department.  
Technical aspects, principles and interpretation of selected laboratory procedures in hematology, chemistry, cytology and related areas.
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. Preparation and presentations 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, Winter, Spring. 2(2-0) Approval of department. Instruction in preparation and presentation of seminars; philosophy and methods of research; these 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. 1 to 6 credits. May reenroll for a maximum of 6 credits. PTH 801, 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(0-4) One graduate course in pathology or approval of instructor. Pathologic changes in tissues of animals used in toxicologic studies. Clinical pathologic assessments. Cross, 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. Selected topics in hematology including the pathogenesis, mechanisms and morphologic picture of hematologic 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 clinico-pathologic 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 Pathology. 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.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.