471. Recreation Products Consumption
Winter. 4(4-0) EC 201; ACC 230 or
ACC 202; or approval of department.
Recreation, economic and personality theories of
consumption. Specific recreation product
industry case studies.

480. Supervised Study
Fall, Winter, Spring, Summer. 1 to 4
credits. May reenroll for a maximum of 10
credits. Approval of department.

481. Dimensions of Recreation and
Leisure
Fall. 3(0-0) Approval of department.

482. Park and Recreation Policy
Winter. 3(3-0) Interdepartmental with
the Department of Recreation Development.
Recreation, leisure and work concepts. Determina-
tion of need for recreation facilities. Factors
affecting public and private allocation of
resources for provision of needed facilities.

483. Recreation Research Methods
Winter. 4(4-0) Approval of department.

484. Urban and Regional Recreation
Resource Planning
Fall. 4(4-0) Approval of department.

485. Recreation Research Law
Spring. 3(3-0)

486. Selected Topics
Fall, Winter, Spring, Summer. 1 to 4
credits. May reenroll for a maximum of 15
credits. Approval of department.

487. Special Problems
Fall, Winter, Spring, Summer. 1 to 4
credits. May reenroll for a maximum of 10
credits. Approval of department.

488. Applied Professional Project
Fall, Winter, Spring, Summer. 1 to 4
credits. May reenroll for a maximum of 4 credits.
May reenroll for a maximum of 12 credits. Approval
of department.

489. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable
credit. Approval of department.

490. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable
credit. May reenroll for a maximum of 12
credits. Approval of department.

PATHOLOGY

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

410. General Pathology
Spring. 3(0-0) ANT 316; PSL 432 or
concurrently. Interdepartmental with and
administered by Medical Technology.

411. Basic Histopathology
Spring. 3(3-0) ANT 420, PSL 432 M T
410 or concurrently. Interdepartmental with
and administered by Medical Technology.

501. Introduction to Human Pathology
Spring. 2(2-0) Admission to the College
of Human Medicine and ANT 543; or approval
of department.

502. Human Pathology I
Winter. 2 to 4 credits. Admission to a
college of medicine or approval of department.

503. Human Pathology II
Winter. 4(3-2) PTH 501.

504. Human Pathology III
Spring. 2(1-2) PTH 501.

505. Veterinary Pathology
Fall. 3(2-0) PTH 501.

506. Veterinary Pathology: Problems
Solving Exercises
Fall. 3(2-0) PTH 501.

507. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.

508. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.

509. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.

510. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.

511. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.

512. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.

513. Veterinary Pathology: Problems
Fall. 3(2-0) PTH 501.
621. Histopathology Clerkship
Winter. 3 credits. Completion of 9 terms of professional program, approval of department. Supervised instruction in the examination and interpretation of histologic lesions caused by animal diseases.

651. Veterinary Clinical Pathology Clerkship
Fall, Summer. 4 credits. Satisfactory completion of term 8 of the professional veterinary curriculum, approval of department. Concepts in laboratory interpretation and diagnosis.

652. Veterinary Necropsy Clerkship
Fall, Winter, Spring, Summer. 4 credits. Satisfactory completion of term 8 of the professional veterinary curriculum, approval of department. Supervised necropsy and interpretation of findings.

656. Problems in Veterinary Necropsy
Fall, Winter, Summer, 3 credits. PTH 655, approval of department. Problems related to necropsy and interpretation of findings.

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, 11-0) 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
(820.) 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. 10-3 Approval of department. 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
Summer. 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
(850.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits. PTH 802, PTH 805, PTH 804, PTH 810, approval of department. Preparation, histopathologic examination, description, diagnosis and reporting of specimens from biopsy and necropsy.

818. Pathotaxonomy
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 morphologic picture of hematologic diseases in humans.

821. Advanced Veterinary Hematology
(811.) 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
(811.) Fall of even-numbered years. 4(3-3) Approval of department. Selected topics in clinical biochemistry, enzymology, immunopathology and related subdisciplinary 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 clinicalopathologic study of diseases of laboratory animals.

840. Advanced Hemostasis
Fall of even-numbered years. 2(2-0) M.S. candidates in Clinical Laboratory Medicine or approval of department. Interdepartmental with and administered by Medical Technology Program. Physiology, pathophysiology and laboratory evaluation of hemostatic disorders.

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

911. 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.

PEDIATRICS

College of Osteopathic Medicine

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 F in all courses offered in terms 1 through 5 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.