413. Residential Construction Systems

Spring. 4(3-2) 312 or approval of department.

Analysis of the primary construction systems employed in the residential building industry, especially the economic and social aspects in meeting the housing goals of the U. S.

415. Building Materials

Spring. 4(4-0) 312 or approval of department.

Properties of building materials pertinent to their application and performance in service.

416. Building Costs

Winter. 4(2-4) Approval of department.

Methods of cost estimating. Effects of codes and production practices on costs.

417. Residential Finance

Winter. 4(4-0) Juniors.

Analysis of financial programs for the construction, rehabilitation, remodeling and purchase of homes; especially meeting the nation's goals for low to moderate income housing.

418. Special Topics

(F P 418.) Fall, Winter, Spring, Summer. 1 to 3 credits. Approval of department.

Selected topics in housing.

420. Construction Management

(F P 314, B C 314.) Spring. 4(2-2) 416 or approval of department.

Systems management techniques for residential building organizations inclusive of organization development, operations, planning, scheduling and control, and administrative systems and procedures.

835. Research in Building Construction

(F P 835.) Fall, Winter, Spring, Summer. Variable credit. Approval of department.

899. Research

(F P 899.) Fall, Winter, Spring, Summer. Variable credit. Approval of department.

PARK AND RECREATION RESOURCES* PRR

College of Agriculture and Natural Resources

IDC. Resource Ecology and Man

For course description, see Interdisciplinary Courses.

300. Wilderness Survival

Fall, Winter, Spring, Summer. 4(3-0)

Outdoor skills for utilization of plant and animal materials to provide shelter, fire, signals, water and food in the outdoors. Psychology and attitudes conducive to wilderness survival and appreciation. Field trip required.

*Established January 1, 1969. Formerly a part of the Department of Resource Development.

301. Wilderness Survival (TV)

Fall, Winter, Spring, Summer. 3(3-0) Credit may not be earned in both 300 and 301.

A television lecture course dealing with the principles and attitudes necessary to promote survival in a wilderness setting.

302. Environmental Attitudes and Concepts

Fall. 3(3-0)

Beliefs and attitudes toward land by primitive man and ancient civilizations. Effects of Muir, Thoreau, and others on man/land relationships. Industrialism and environmental quality. Current environmental controversy. Field trip required.

304. Designs for Recreation: Nature and Man

Fall, Spring. 3(3-0) Approval of department.

Design strategies are used to demonstrate relationships between characteristics of the environment and man's use of it. Integration of work, leisure, and recreation uses within environmental potentials and limits is emphasized.

344. Leisure and Recreation Resources

Fall, Spring. 3(3-0)

Leisure in relation to park and recreation resources. History and philosophy, significance in modern society, and impact on urban and natural resource developments.

351. Environmental Interpretation I: Principles

Winter. 3(3-0)

Philosophy, needs, types, and uses of information services in private, municipal, county, state and federal park and recreation areas. The role of the park interpreter (naturalist).

440. Park and Recreation Administration

Fall, Winter. 4(4-0)

Park and recreation organization, administration and policy at municipal, county, and regional level. Field trip required.

442. State and Federal Recreation Resource Policy

Winter. 3(3-0)

Origin, development and significance of public policy in recreation resource development in the United States with emphasis at state and federal levels. Field trip required.

444. Park and Recreation Area Design

Fall, Winter, Spring. 4(2-4) 304; HRT 211 or 212, or BOT 318; approval of department.

Planning and design principles of space, scale, and circulation applied to the use of park and recreation areas and facilities. Field trip required.

446. Park Area Operations

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

Problems in operations and maintenance of park and recreation areas and facilities. Personnel practices, budgeting, and maintenance schedules. Selection and adaptability of maintenance equipment. Field trip required.

448. Field Studies in Park Administration

Fall. 3 credits. Approval of department.

Investigation and analysis of outstanding park and recreation programs. Visits to areas under local, state, and federal jurisdiction. Evaluation of administrative practices, area management, and operation policies. Conducted as a traveling class with agency assistance.

449. Recreation Land Management

Fall, Spring. 3(3-0) Not open to majors.

Fundamentals of outdoor recreation resource management. Planning, development, and administration of programs and facilities.

450. Natural Resource Administration

Fall, Spring. 4(4-0) Interdepartmental with Fisheries and Wildlife, Forestry, and Resource Development Departments and Natural Resources. Administered by the Forestry Department.

Concepts and methods of administering wildland properties. The legal, economic and social environment. Benefit-cost analysis of management changes. Unit organization, personnel management and accounting. Presents a systems view of administration.

451. Environmental Interpretation II: Methods and Devices

Spring. 4(3-1) 351.

Methodology and equipment used in information transmission in natural, historic, and scenic areas. Site selection and development criteria for natural resource interpretation.

480. Supervised Study

Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll for a maximum of 10 credits. Approval of department.

Seminars on current problems. Supervised readings. Individual undergraduate research on selected topics.

484. Senior Proseminar

Winter. 1(1-0) Senior majors.

Seminars on current professional problems and literature.

842. Park and Recreation Policy

Fall. 3(3-0) Interdepartmental with the Resource Development Department.

Recreation, leisure and work concepts. Determination of needs for recreation facilities. Factors affecting public and private allocation of resources for provision of needed facilities.

844. Recreation Research Methods

Fall. 4(4-0) SOC 312 or approval of department.

Relate recreation research to broader context of social scientific investigation and to the nature and philosophy of social scientific research. Examine the theoretical and methodological approaches in recreation research.

846. Urban Recreation Area and Program Analysis

Spring. 4(4-0) Approval of department.

Analysis of urban public, private and commercial recreation areas, facilities, and programs. Construction of a typology of urban communities. Course is conducted in selected urban communities in Michigan.

848. Recreation Resource Law
Spring. 3(3-0)

Legal basis for public recreation. Methods of acquiring recreational resources, including contracts and condemnation procedures. Administrative problems, including zoning, liability, civil rights and law enforcement. Study of cases and statutes.

850. Development of Water Recreation Resources
Spring. 3(3-0) Approval of department.

Administration, research, design, and construction of water recreation facilities. Policy issues, use conflict, and fiscal planning reviewed in light of interagency relationship and legislative mandate.

880. Special Problems
Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 10 credits. Approval of department.

Seminars on current problems. Supervised readings. Independent study of selected topics.

882. Recreation Research Seminar
Fall, Winter. 2(2-0) May re-enroll for a maximum of 4 credits. Approval of department.

Evaluation of a variety of studies presented by the scientists to illustrate how principles are applied to recreation research project management.

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

PATHOLOGY PTH

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

404. General Pathology
Fall. 5(3-6) ANT 420, Junior Medical Technology majors, or approval of department.

407. Clinical Pathology
Winter, Spring. 3 or 5 credits. 404 or approval of department.

Theory and technics in hematology, coagulation, blood banking, clinical microscopy and chemical pathology, including urinalysis, blood chemistry and continuous flow analysis.

408. Clinical Pathology
Winter, Spring. 3 or 5 credits. 404 or approval of department.

Continuation of 407.

502. Human Pathology I
Winter. 2(2-0) Second term medical students or approval of department.

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.

503. Human Pathology II
Spring. 3(2-2) 502 or approval of department.

A study of pathology in which general pathology, system pathology and laboratory diagnosis are combined in a system-oriented sequence. The first four weeks are devoted to hematology, the remaining six to neuropathology.

504. Human Pathology III
Fall. 3(2-2) 503 or approval of department.

A continuation of PTH 503. Diseases of the cardiovascular system, including stress effects, arteriosclerosis and disorders of autonomic and endocrine regulation. Laboratory sessions include the study of histologic sections.

505. Human Pathology IV
Winter. 3(2-2) 504 or approval of department.

A continuation of 504. The systems include: lung, kidney, male genitourinary and bone and joints. In the laboratory sections, gross and microscopic changes in diseased tissues are studied and correlated with lecture material. Separate lab sessions covering pulmonary function tests, acid-base balance and urinalysis are included.

506. Human Pathology V
Spring. 3(2-2) 505 or approval of department.

A continuation of PTH 505. The systems include gastrointestinal tract (including liver and pancreas), female reproductive tract and breast.

550. Veterinary Pathology I
Spring. 6(3-6) Admission to the professional veterinary program, or approval of department.

Principles of pathology, including causes of disease, disturbances of cell growth and metabolism, necrosis, circulatory changes, inflammation and neoplasms; introduction to clinical hematology.

560. Pathology II
Winter, Summer. 7(4-8) 550.

Continuation of 550, with coverage of the hematopoietic, cardiovascular, urinary, digestive, respiratory and reproductive systems; integration of principles of clinical pathology.

608. Pathology Clerkship
Fall, Winter, Spring, Summer. 3 to 17 credits. May re-enroll for a maximum of 17 credits. H M 602 or approval of department.

Anatomic and clinical pathology, with emphasis on clinical-pathological correlations. Conducted in the pathology departments of affiliated hospitals.

610. Veterinary Clinical Pathology
Fall, Spring. 3(2-3) 560.

Laboratory procedures in the diagnosis and prognosis of animal disease; examination of body tissues, fluids and excreta.

615. Diseases of Poultry
Winter, Summer. 4(4-0) Eighth-term Veterinary Medicine students.

Etiology, signs, lesions, differential diagnosis and control of infectious and noninfectious diseases of birds, with emphasis on domestic poultry.

620. Human Pathology I
Fall. 5(4-2) Medical school Sophomores or approval of department.

Recognition and classification of gross and microscopic structural changes in disease, analysis of functional consequences, and correlation with clinical manifestations.

621. Human Pathology II
Winter. 5(4-2) 620.

Continuation of 620.

622. Principles of Laboratory Medicine
Spring. 5(4-2) 621.

Study of diseases, the diagnosis and management of which rely on laboratory methods; hemotologic, endocrine, metabolic, and infectious diseases are included.

800. Problems in Pathology
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

Elective work for students in veterinary medicine interested in pathology as a speciality, or in the special pathology of diseases of a particular class or species, and for graduate minors and majors interested in pathological techniques or in non-thesis research.

801. Pathology Seminar
Fall, Winter, Spring, Summer. 1(1-0) May re-enroll for a maximum of 3 credits for M.S. candidates and 6 credits for Ph.D. candidates. Approval of department.

Seminar required of all majors in Pathology.

802. Advanced Histopathology
Fall. 5(6-0) Approval of department.

A relatively advanced and comprehensive study in the histopathologic aspects of systemic and special pathology; independent study in the field of pathogenesis and microscopic pathology.

803. Advanced Histopathology
Winter. 5(6-0) 802 and approval of department.

Continuation of 802.

805. Pathology Proseminar
Fall. 2(2-0) Approval of department.

Philosophy and methods of research; theses and other research reports; literature review; illustration of research data; practical assignments.

810. Post-Mortem Diagnosis
Winter, Summer. 3(0-9) May re-enroll for a maximum of 6 credits. Approval of department. Required of majors.

Instruction and practice in diagnosis of animal diseases by means of necropsy and other laboratory techniques. Emphasis will be placed upon correlation and interpretation of gross and microscopic lesions and the results of other tests.

811. Advanced Clinical Pathology
Winter. 3(1-6) Approval of department.

Application of standard and newer techniques and instrumentations in hematology, biochemistry, parasitology, etc., to the diagnosis of disease.

812. Hematology
Winter. 5(3-4) 408 or 610 or approval of department.

Pathology of diseases of blood and an analysis of diagnostic laboratory procedures.

820. Oncology
Spring. 3(6-0) Approval of department.

A study of benign and malignant neoplasms with emphasis on gross and microscopic characteristics and diagnosis.