

Descriptions – Osteopathic Medicine (College of)
of
Courses

536. Comprehensive Patient Evaluation and Management III
 Winter, Spring. 2 to 6 credits. OST 533.
 Continuation of OST 535.

537. Comprehensive Patient Evaluation and Management IV
 Spring, Summer. 2 to 6 credits. OST 533.
 Continuation of OST 536.

551. Introduction to Laboratory Medicine
 Fall. 2 credits. ANT 560.
 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.

552. Systems Biology - Integumentary
 Summer. 2 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521B, PTH 502.
 A multidisciplinary approach to the integumentary system providing a functional integration of basic science and clinical information.

553. Systems Biology - Nervous System
 Summer. 10 credits. ANT 563, PSL 500A, PTH 502, BCH 502, PHM 521B, MPH 521.
 A multidisciplinary approach to the nervous system providing a functional integration of basic science and clinical information.

554. Systems Biology - Cardiovascular
 Fall. 15 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521B, PTH 502.
 A multidisciplinary approach to the cardiovascular system providing functional integration of basic science and clinical information.

555. Systems Biology - Respiratory
 Winter. 8 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521B, PTH 502.
 A multidisciplinary approach to the respiratory system providing functional integration of basic science and clinical information.

556. Systems Biology - Urinary
 Winter. 7 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521B, PTH 502.
 A multidisciplinary approach to the urinary system providing functional integration of basic science and clinical information.

557. Systems Biology - Gastrointestinal
 Spring. 13 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521B, PTH 502.
 A multidisciplinary approach to the gastrointestinal system providing functional integration of basic science and clinical information.

558. Systems Biology - Growth and Aging
 Spring. 7 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 520B, PTH 502.
 A multidisciplinary approach to growth, development, and aging within (but not limited to) the field of pediatrics and gerontology providing functional integration of basic science and clinical information.

559. Systems Biology - Reproductive
 Spring. 7 credits. ANT 560, ANT 565; PSL 500A; MPH 521; BCH 502; PHM 520B; PTH 502.
 A multidisciplinary approach to the male and female reproductive system providing functional integration of basic science and clinical information (includes obstetrics and gynecology).

560. Systems Biology - Musculoskeletal
 Summer. 6 credits. ANT 560, ANT 565; PSL 500A; MPH 521; BCH 502; PHM 521B; PTH 502.
 A multidisciplinary approach to the musculoskeletal system providing functional integration of basic science and clinical information.

590. Special Problems
 Fall, Winter, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 32 credits. Approval of department.
 Each student will work under direction of a faculty member on an experimental, theoretical or applied problem.

600. Ambulatory Care
 Fall, Winter, Spring, Summer. 24 credits. Grade P in all courses offered in Terms I-8 or approval of department.
 A multidisciplinary approach in clinical settings to the ambulatory patient to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles: patient evaluation, diagnosis, management, and therapy.

610. The Osteopathic Examination I
 Summer. I(0-4) Admission to a college of medicine or approval of instructor.
 Instruction in the osteopathic examination.

611. The Osteopathic Examination II
 Fall. I(0-4) OST 610 or approval of instructor.
 Continuation of OST 610.

612. The Osteopathic Examination III
 (F M 650.) Winter. I(0-4) OST 611 or approval of instructor.
 Continuation of OST 611.

613. The Osteopathic Examination IV
 Spring. I(0-4) OST 612 or approval of instructor.
 Continuation of OST 612.

614. The Osteopathic Examination V
 Fall, Winter, Spring, Summer. I(0-4) OST 613.
 Continuation of OST 613.

615. The Osteopathic Examination VI
 Fall, Winter, Spring, Summer. I(0-4) OST 613.
 Continuation of OST 614.

616. The Osteopathic Examination VII
 Fall, Winter, Spring, Summer. I(0-4) OST 613, OST 614, OST 615 or approval of instructor.
 Continuation of OST 615.

PACKAGING **PKG**

College of Agriculture and Natural Resources

210. Principles of Packaging
 Fall, Winter, Spring, Summer. 3(3-0)
 A general course in packaging principles covering the growth and development of the field, and the technological and motivational problems involved in present day packaging. Consideration will be given to the basic functions of the package and their relation to the needs and wants of our society.

320. Packaging Materials
 Fall, Winter. 4(4-0) PKG 210, PHY 237, CEM 131, CEM 161, CEM 132.
 Common packaging materials including wood, paper, paperboard, plastics, metal foils and sheets, glass, adhesives, cushioning media; their basic properties in relation to performance of package.

330. Package Printing
 Winter. 3(3-0) PKG 320 or approval of school.
 Basic printing processes used for packaging materials. Advantages, disadvantages and identification of these printing methods.

340. Packaging and the Environment
 Winter. 4(4-0)
 Broad study of the effects of packaging on environmental quality, including solid waste, air and water quality, laws, economics, energy considerations and resources conservation.

422. Packaging Systems
 Winter, Spring. 4(4-0) PKG 320 or approval of school.
 Design, use and evaluation of packages and packaging systems. A one-day field trip is required.

423. Dynamics of Packaging
 Spring. 4(3-3) PKG 422 or approval of school.
 A study of the protective function of the packaging systems in relation to their environment and shock and vibration isolation methods. A one-day field trip is required.

424. Packaging Problems
 Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 9 credits. PKG 422, 2.50 grade-point average and approval of school.
 Development of solutions to specific packaging problems.

425. Packaging Process Analysis
 Fall, Spring. 4(4-0) PKG 422.
 The integrated study of the operation structure and control of the packaging and package-making process. A one-day field trip is required.

427. Packaging Materials and Systems Laboratory
 Fall, Winter, Spring. 4(2-6) PKG 320, PKG 422 or approval of school.
 Methods of measuring properties of packaging materials. Design, manufacture and performance testing of complete packages. Techniques for evaluating test results. Value of various test methods.

428. Packaging Development
Fall, Spring. 4(3-2) PKG 427, CPS 110, Seniors.
Development of packages to meet present-day requirements of protection and merchandising.

429. Packaging Economics
Winter. 3(3-0) PKG 422, EC 200, AFA 201 or approval of school.
Examination of economic issues in packaging as they relate to policies of the firm and of government. Relationships between economic policy and social issues.

430. Packaging Machinery
Spring. 4(4-0) PKG 422 or approval of school.
The components for automated packaging lines, and auxiliary materials handling equipment, including consideration of design, selection, specification and operation of machinery for the package-making and package-filling operations. One-day field trip required.

440. Special Topics
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits if different topics are taken. Juniors or approval of school.

463. Seminar
Fall. 2(0-4) Senior Majors.
Discussions on current packaging problems.

801. Packaging Systems
Fall. 4(3-3)
Analysis of various existing packaging systems; problem solving exercises.

810. Advanced Packaging Materials
Spring. 3(2-2) PKG 427 or approval of department.
Physical and chemical properties of packaging materials. Relationship between properties of materials and performance of packages.

820. Permeability and Shelf Life
Winter. 4(3-3) PKG 422, MTH 113, CPS 110 or approval of school.
Comprehensive study of the relationship of the storage life of packaged food and agricultural products and the gas, moisture, and vapor permeability of packages in various environments. Computer aided package design.

822. Seminar
Fall. 1(1-0) Approval of department.
Discussions of recent advances in packaging and reports by graduate students and faculty on research problems. Field trips required.

834. Special Investigations in Packaging
Fall, Winter, Spring, Summer. Variable credit.

840. Selected Topics
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits if different topics are taken. Approval of department.

899. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of school.

PARK AND RECREATION RESOURCES PRR

College of Agriculture and Natural Resources

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.

301. Wilderness Survival (TV)
Fall, Winter, Spring, Summer. 3(3-0)
Credit may not be earned in both PRR 300 and PRR 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
Fall, 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
Winter, Spring. 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. 4(2-4) PRR 304, HRT 211 or HRT 212, or BOT 318 or 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.

445. Comprehensive Recreation Planning
Fall, Winter. 4(4-0) EC 200, PRR 344 or approval of department.
Comprehensive planning techniques for recreation resources at national, state, and local levels. Supply-demand analysis, forecasting, impact assessment, survey methods and citizen input for recreation system planning.

446. Park Area Operations
Winter, 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.

447. Recreation Planning Projects
Fall, Spring. 4(1-6) PRR 444, PRR 445, PRR 446 or approval of department.
Accumulative research, planning and evaluation of recreation resources. Supervised project requiring synthesization of recreation planning and design criteria as selected by student and approved by instructor. 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
Winter. 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. 4(4-0) Seniors; not open to forestry majors. Interdepartmental with Agriculture and Natural Resources and the departments of Fisheries and Wildlife, Forestry, and Resource Development. Administered by the Department of Forestry.
Concepts and methods of administering wild-land 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) PRR 351.
Methodology and equipment used in information transmission in natural, historic, and scenic areas. Site selection and development criteria for natural resource interpretation.

452. Sky Interpretation
Spring 3(2-2) PRR 351 or approval of department.
Observations of celestial objects and phenomena; past and present concepts of the sky; and procedures and materials for interpreting the sky.