

611. Case Studies in Obstetrics and Gynecology
Fall, Winter, Spring, Summer. 8 to 16 credits. May reenroll for a maximum of 16 credits. H M 602.
The student will design, pretest and field test a simulation of a clinical problem in obstetrics and gynecology.

655. Emergency Medicine Clerkship
Fall, Winter, Spring, Summer. 6 credits. May reenroll for a maximum of 12 credits. Grade P in all courses offered in terms 1 through 8.
A clerkship organized to develop skills in the acute evaluation and management of patients in the hospital emergency room and other locations.

531. Comprehensive Patient Evaluation II
Fall. 2 to 6 credits. OST 530, ANT 565.
Continuation of OST 530.

532. Comprehensive Patient Evaluation III
Winter. 2 to 6 credits. OST 531.
Interdepartmental course in physical examination skills. Stresses application of comprehensive, osteopathic evaluation of the patient. Introduction to office procedures and physical diagnosis.

533. Comprehensive Patient Evaluation IV
Spring. 2 to 6 credits. OST 532.

Interdepartmental course in physical examination skills. Stresses comprehensive, osteopathic evaluation of the patient. Includes preceptorship and appropriate systems biology clinical experiences.

534. Comprehensive Patient Evaluation and Management I
Fall, Summer. 2 to 6 credits. OST 533.
Physical examination skills, diagnosis and patient management. Stresses comprehensive, osteopathic evaluation and management of the patient. Includes preceptor assignment and appropriate systems biology clinical experiences.

535. Comprehensive Patient Evaluation and Management II
Fall, Winter. 2 to 6 credits. OST 533.
Continuation of OST 534.

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.

OSTEOPATHIC MEDICINE O M

College of Osteopathic Medicine

534. Clinical Science V
Summer. 1(0-3) Admission to a college of medicine.
A clinic-based program providing additional emphasis on history taking and physical examination as well as developing fundamental abilities in diagnosis and problem solving in the clinic setting.

535. Clinical Science VI
Fall. 1(0-3) Admission to a college of medicine.
A continuation of O M 534.

536. Clinical Science VII
Winter. 1(0-3) Admission to a college of medicine.
Continuation of O M 535.

590. Special Problems in Osteopathic Medicine
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.

620. Directed Studies
Fall, Winter, Spring, Summer. 2 to 24 credits. May reenroll for a maximum of 48 credits. Admission to a college of medicine or approval of department.
Individual or group work on special problems in medicine.

651. Obstetrics-Gynecology Clerkship
Fall, Winter, Spring, Summer. 12 credits. Grade P in all courses offered in terms 1 through 8.
Clinical exposure in obstetrics and gynecology. Program developed to achieve efficiency in obstetrical patient evaluation, management; motor skills, aptitudes; care of new born; evaluation of postpartum patient; management of gynecologic problems.

653. Surgery/Anesthesiology Clerkship
Fall, Winter, Spring, Summer. 12 credits. Grade P in all courses offered in terms 1 through 8.
Clinical exposure in area of surgical diagnosis, management, treatment. Program structure developed to achieve proficiency in motor skills, aptitudes; comprehension of concepts and principles; patient evaluation, diagnosis, management, and therapy.

656. Orthopedics Clerkship
Fall, Winter, Spring, Summer. 6 credits. May reenroll for a maximum of 12 credits. Grade P in all courses offered in terms 1 through 8.
Clinical exposure in area of orthopedics. Program structure developed to achieve proficiency in motor skills, aptitudes; comprehension of concepts and principles; patient evaluation, diagnosis, management, and therapy.

658. Otorhinolaryngology Clerkship
Fall, Winter, Spring, Summer. 6 credits. May reenroll for a maximum of 12 credits. Grade P in all courses offered in terms 1 through 8.
Clinical exposure in area of otorhinolaryngology. Program structure developed to achieve proficiency in motor skills, aptitudes; comprehension of concepts and principles; patient evaluation, diagnosis, management, and therapy.

OSTEOPATHIC MEDICINE OST (COLLEGE OF)

500. Historical and Biological Foundations of Osteopathic Medicine
Fall. 2(2-0) Admission to a college of medicine or approval of department.
Historical development of the osteopathic profession. Integration of biological and osteopathic principles in the consideration of health and disease.

516. Medical Ethics
Winter. 3(3-0) Interdepartmental with and administered by the College of Human Medicine.
Analysis and evaluation of the ethical elements of medical decision making. Topics include: patient rights, physician responsibilities, euthanasia, informed consent, parentalism, confidentiality, biomedical research, and allocation of scarce resources.

520. Normal Endocrine Structure and Function
Winter. 2 to 6 credits. BCH 502, PSL 500A, ANT 560, ANT 565 or approval of department.
An integrated basic science course presenting a series of lectures and laboratories related to the normal structure and function of the endocrine organs. Prerequisite for studying endocrine diseases in systems biology.

530. Comprehensive Patient Evaluation I
Fall. 2 to 6 credits. Admission to a college of medicine. ANT 565 or concurrently.
Interdepartmental course in physical examination skills. Stresses comprehensive, osteopathic evaluation of the patient.

Descriptions - College of Osteopathic Medicine

of Courses

- 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 1-8 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.

- 611. The Osteopathic Examination II**
Fall. 1(0-4) OST 610 or approval of instructor.
Continuation of OST 610.

- 612. The Osteopathic Examination III**
(F M 650.) Winter. 1(0-4) OST 611 or approval of instructor.
Continuation of OST 611.

- 613. The Osteopathic Examination IV**
Spring. 1(0-4) OST 612 or approval of instructor.
Continuation of OST 612.
Approved through Spring 1983.

- 614. The Osteopathic Examination V**
Fall, Winter, Spring, Summer. 1(0-4) OST 613.
Continuation of OST 613.

- 615. The Osteopathic Examination VI**
Fall, Winter, Spring, Summer. 1(0-4) OST 613.
Continuation of OST 614.

- 616. The Osteopathic Examination VII**
Fall, Winter, Spring, Summer. 1(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, Spring. 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**
Fall, Winter, Spring. 4(4-0) PKG 320 or approval of school.
Design, use and evaluation of packages and packaging systems.

- 423. Dynamics of Packaging**
Fall, Winter, 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, Winter, 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(2-4) 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, Winter, 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.

- 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.