

**406. Senior Nursing**  
*Fall, Winter, Spring. 8(3-20) Senior majors.*  
A study of basic principles of leadership and their application in the practice of team nursing.

## OSTEOPATHIC MEDICINE\* O M

### College of Osteopathic Medicine

**501. Medical Biology I**  
*Fall. 4(4-0)*  
Integrated aspects of biology providing a foundation and vocabulary preparatory to studies in osteopathic medicine.

**502. Medical Biology II**  
*Winter. 3 to 8 credits. Admission to a college of medicine.*  
Continuation of 501 emphasizing pathology and pharmacology.

**530. Clinical Science I**  
*Fall. 2(1-3) Admission to a college of medicine.*  
Fundamental concepts and skills essential to the performance of a clinical history and physical examination.

**531. Clinical Science II**  
*Winter. 2(2-0)*  
Techniques, concepts and skills required for competent history taking and physical examination utilizing lectures, laboratory and films for instructional purposes.

**532. Clinical Science III**  
*Spring. 1(0-3) Admission to a college of medicine*  
A clinical study program providing an opportunity to learn the skills of history taking and physical examination by actual performance of the involved techniques on patients under physician supervision.

**533. Clinical Science IV**  
*Summer. 1(0-3) Admission to a college of medicine.*  
Continuation of 532.

**534. Clinical Science V**  
*Fall. 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**  
*Winter. 1(0-3) Admission to a college of medicine.*  
A continuation of 534.

**536. Clinical Science VII**  
*Spring. 1(0-3) Admission to a college of medicine.*  
Continuation of 535.

**537. Clinical Science VIII**  
*Summer. 1(0-3) Admission to a college of medicine.*  
Continuation of 536.

**550. Systems Biology I**  
*Spring. 5 to 15 credits. 502.*  
A multidisciplinary approach to the hemantopoeitic and nervous systems providing a functional integration of basic science and clinical information.

**551. Systems Biology II**  
*Summer. 5 to 15 credits*  
Continuation of 550 with emphasis on a multi-disciplinary approach to the nervous system.

**552. Systems Biology III**  
*Fall. 5 to 15 credits.*  
Continuation of 551 with emphasis on multi-disciplinary approach to the cardiovascular system.

**553. Systems Biology IV**  
*Winter. 5 to 15 credits.*  
Continuation of 552 with emphasis on multi-disciplinary approach to the respiratory, renal and urinary systems.

**554. Systems Biology V**  
*Spring 5 to 15 credits.*  
Continuation of 553 with emphasis on multi-disciplinary approach to the gastrointestinal system.

**555. Systems Biology VI**  
*Summer. 5 to 15 credits.*  
Continuation of 554 with emphasis on multi-disciplinary approach to the study of pediatrics, obstetrics and gynecology.

**600. Clinical Science Practicum**  
*Fall, Winter, Spring, Summer. 15 credits. May re-enroll for a maximum of 60 credits.*  
A clinic oriented course covering the major areas of medical practice including involvement in Family Practice and Community Health Services.

**620. Directed Studies**  
*Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 24 credits. Approval of department.*  
Individual or group work on special problems in medicine.

## OBSTETRICS, GYNECOLOGY AND REPRODUCTIVE BIOLOGY\* OGR

### College of Human Medicine

**608. Obstetrics/Gynecology Clerkship**  
*Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 43 credits. H M 602.*  
Experience with gynecologic and obstetrical patients, in in-patient and out-patient settings, under the direction of community practitioners and members of the MSU faculty.

## 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.

\*Established July 1, 1971.

**320. Packaging Materials**  
*Fall, Spring. 3(3-0)*  
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.

**321. Packaging Materials Laboratory**  
*Fall, Spring. 2(0-6) 320 or concurrently.*  
Problems and techniques of measuring the properties of packaging materials and the use of those measurements.

**330. Graphics for the Packaging Industry**  
*Winter. 4(3-3) 320 or approval of school.*  
Designing graphics for specific types of printing processes and for various packaging materials. Considerations in ink formulation, identification of the various printing processes used, and the advantages and disadvantages of various reproduction methods as used for packaging.

**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. 4(3-3) 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) 422, MTH 113, 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 re-enroll for a maximum of 9 credits. 422, 2.5 grade-point average and approval of school.*  
Development of solutions to specific packaging problems.

**425. Packaging Process Analysis**  
*Winter, Spring. 4(3-3) CPS 110.*  
The integrated study of the operation structure and control of the packaging and package-making process. A one-day field trip is required.

**428. Packaging Development**  
*Fall, Spring. 4(3-2) 422 or approval of school*  
A study of the functions of each area concerned with the development of packages to meet present-day requirements of protection and merchandising.

**430. Packaging Machinery**  
*Spring. 4(3-3) 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.

**463. Seminar**  
*Fall. 2(0-4) Must have job experience to enroll.*  
Detailed report on work performed in practical experience or outside packaging projects.