582. Clinical Nurse Specialist Practicum III

Winter. 5(2-9) N E 581, approval of college.

Primary care management of clients with chronic health problems. Utilizes stress-adaptation framework. Longitudinal study of a family.

583. Clinical Nurse Specialist Practicum IV

Spring. 5(2-9) N E 582, approval of college.

Primary care management of clients with multiple health problems. Focus on loss theory. Longitudinal study of a family.

590. Special Problems

Fall, Winter, Spring. 1 to 6 credits. May reenroll for a maximum of 12 credits. Approval of instructor.

Individual or group in-depth study of specific areas in nursing. Independent study.

595. Selected Topics

Fall, Winter, Spring. 2 to 6 credits. May reenroll for a maximum of 6 credits if different topics are selected. Approval of instructor.

Selected issues, trends, programs or theories in nursing.

899. Master's Thesis Research

Fall, Winter, Spring. 1 to 6 credits. May reenroll for a maximum of 15 credits. N E 570, approval of instructor.

Clinical research problem related to primary health care.

OBSTETRICS, GYNECOLOGY AND REPRODUCTIVE BIOLOGY OGR

College of Human Medicine

608. Obstetrics/Gynecology Clerkship

Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll 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.

609. Obstetrics and Gynecology Advanced Clerkship

Fall, Winter, Spring, Summer. 4 to 16 credits. May reenroll for a maximum of 16 credits. OGR 608, approval of department and approval of community coordinator.

Advanced clinical experience in gynecology and/or obstetrics.

OSTEOPATHIC MEDICINE O M

College of Osteopathic Medicine

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. 8 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; evaluation of postpartum patient; management of gynecologic problems.

653. Surgery Clerkship

Fall, Winter, Spring, Summer. 8 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.

654. Anesthesiology Clerkship

Fall, Winter, Spring, Summer. 4 to 8 credits. Grade P in all courses offered in Terms 1 through 8.

Clinical exposure in the area of anesthesiology. Motor skills; concepts and principles; patient evaluation, management, and therapy.

656. Orthopedics Clerkship

Fall, Winter, Spring, Summer. 6 to 8 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 to 8 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. Basic Concepts in Biomechanics

Winter. 2(2-0) Admission to a college of medicine or approval of department. Interdepartmental with and administered by the Department of Biomechanics.

Basic concepts of biomechanics and their relationship to functional anatomy and osteopathic manipulative therapy.

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, physican responsibilities, euthanasia, informed consent, parentalism, confidentiality, biomedical research, and allocation of scarce resources.

520. Normal Endocrine Structure and Function

Spring. 3 credits. BCH 502.

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.

531. Comprehensive Patient Evaluation II

Winter. 2 to 6 credits. OST 530, ANT 565.

Continuation of OST 530.

532. Comprehensive Patient Evaluation III

Spring. 4 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

Fall. 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.

552. Systems Biology - Integumentary

Summer. 2 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521, PTH 502.

A multidisciplinary approach to the integumentary system providing a functional integration of basic science and clinical information.

553. Systems Biology - Nervous System

Fall. 10 credits. ANT 563, PSL 500A, PTH 502, BCH 502, PHM 521, MPH 521.

A multidisciplinary approach to the nervous system providing a functional integration of basic science and clinical information.

554. Systems Biology - Cardiovascular

Spring. 15 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521, PTH 502.

A multidisciplinary approach to the cardiovascular system providing functional integration of basic science and clinical information.

555. Systems Biology - Respiratory

Summer. 8 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521, PTH 502.

A multidisciplinary approach to the respiratory system providing functional integration of basic science and clinical information.

556. Systems Biology - Urinary

Fall. 7 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 521, PTH 502.

A multidisciplinary approach to the urinary system providing functional integration of basic science and clinical information.

557. Systems Biology - Gastrointestinal

Winter. 13 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PHM 520, PTH 502.

A multidisciplinary approach to the gastrointestinal system providing functional integration of basic science and clinical information.

558. Systems Biology - Growth and Development

Fall. 5 credits. ANT 560, ANT 565, PSL 500A, MPH 521, BCH 502, PTH 502.

A multidisciplinary approach to growth and development within the field of pediatrics providing functional integration of biological, behavioral and clinical sciences.

559. Systems Biology - Reproductive

Fall. 7 credits. ANT 560, ANT 565; PSL 500A; MPH 521; BCH 502; 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 521; 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.

610. Subspecialty Clerkship: Child Psychiatry

Fall, Winter, Spring, Summer. 4 to 16 credits. PSC 608. Interdepartmental with and administered by the Department of Psychiatry.

Subspecialty experiences in psychiatry in clinical settings with child patients and their families.

614. The Osteopathic Examination I

Winter, Spring. 1(0-4) OST 533 or approval of instructor.

Emphasizes continuing development of palpatory diagnostic skills, neuromusculoskeletal patient assessment, selection and utilization of appropriate osteopathic manipulative treatment.

615. The Osteopathic Examination II

Spring, Summer. 1(0-4) OST 614 or approval of instructor.

Introductory clinical course in the application of neuromusculoskeletal assessment, palpatory diagnosis and osteopathic manipulative treatment in ambulatory clinics.

616. The Osteopathic Examination III

Fall, Summer. 1(0-4) OST 615 or approval of instructor.

Introductory clinical course in the application of neuromusculoskeletal assessment, palpatory diagnosis and osteopathic manipulative treatment in the hospital setting.

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.

321. Technical Principles for Packaging

Fall, Winter, Spring. 4(3-2) PKG 210, CEM 143, PHY 237 or approval of department.

Relationships between package systems and distribution environments. Testing, evaluating and predicting package performance under various environmental influences.

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.

331. Plastic and Glass Packaging

Fall, Winter, Spring. 4(3-2) PKG 321 or approval of department.

Physical and chemical properties of plastics and glass and their relationship to selection, design, manufacture, performance and evaluation of container systems.

332. Paper and Metal Packaging

Fall, Winter, Spring. 4(3-2) PKG 321 or approval of department.

Physical and chemical properties, manufacture, conversion and use of wood, paper, paperboard, metals, metal foils and related components. Design, use and evaluation of packages made from these materials.

340. Packaging and the Environment

Winter. 3(3-0)

Broad study of the effects of packaging on environmental quality including solid waste management, air and water quality, laws, economics, energy considerations, resource conservation and environmental ethics.

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(3-2) PKG 422.

The integrated study of the operation, structure and control of packaging and package-making processes. A one-day field trip is required.

428. Packaging Development

Fall, Winter, Spring. 4(3-2) PKG 427, CPS 115, Seniors.

Development of packages to meet present-day requirements of protection and merchandising.

429. Packaging Economics

Winter. 3(3-0) PKG 422, EC 202, ACC 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.

435. Distribution Packaging

Fall, Winter, Spring. 3(3-0) EC 202, PKG 422, Juniors or approval of school.

Interrelationships between packaging and other segments of the distribution system. Market related issues in packaging: materials handling, transportation, and inventory control.

438. Pharmaceutical Packaging

Winter. 3(3-0) PKG 427.

Special requirements for packaging pharmaceuticals and medical devices. Packageforms and procedures that meet these requirements. Labeling, regulatory requirements, and effect of sterilization on packages.

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.

448. Design of Shipping Containers

Spring. 2(1-2) PKG 423.

Students design, build and test a shipping package system for an industrial product. Lectures by industry personnel on specific shipping containers not discussed in other packaging courses.

450. Packaging Laws and Regulations

Spring. 3(3-0) PKG 422 or approval of school.

History and development of packaging laws and regulations. Relationships among law, government regulation and commercial regulation. Effect of current laws and regulations on packaging. Personal liability of the packaging professional.

455. Food Packaging

Fall. 4(3-2) PKG 427 or approval of school.

Food packaging systems and their relationship to specific products, processes, regulations and equipment.

463. Seminar

Fall. 2(0-4) Senior Majors.

Discussions on current packaging problems.