

**447. Pest Management: Systems Management for Plant Protection (444.)** Winter. 4(3-2) NSC 445, NSC 446 or approval of instructor. Interdepartmental with Agriculture and Natural Resources. Designed to integrate knowledge and improve ability in arriving at pest management decisions of varying complexity involving the fields of agronomy, wildlife, horticulture, entomology, and plant pathology.

**492. Integrative Studies**  
Fall, Winter, Spring, Summer. 3 to 5 credits. Juniors.  
In-depth study of topics which require an integration within or among the natural sciences or between the natural sciences and other major areas of human knowledge.

**801. Special Problems in Electron Microscopy**  
Fall, Winter, Spring, Summer. 1 to 15 credits. Approval of instructor.

**802. Essentials of Electron Microscopy**  
Fall, Winter. 2(2-0) Approval of instructor; NSC 810 or NSC 820 or NSC 830 concurrently.  
Principles of electron microscopy including optical theory, instrument design and construction and selected specimen preparative procedures. Emphasis on current literature.

**810. Methods in Transmission Electron Microscopy**  
Fall, Winter, Spring. 3(1-5) Approval of instructor; NSC 802 or concurrently.  
Use of the transmission electron microscopes and preparative instruments. Preparative technique for biological and nonbiological materials. Photographic principles including interpretation of micrographs.

**820. Methods in Scanning Electron Microscopy**  
Fall, Winter, Spring. 3(1-5) Approval of instructor; NSC 802 or concurrently.  
Use of the scanning electron microscope and preparative equipment. Preparative technique for biological and nonbiological materials. Interpretation of micrographs.

**830. Analytical Electron Microscopy**  
Fall, Spring. 2(1-3) Approval of instructor; NSC 802 or concurrently.  
Use of X-ray analysis on electron microscopes and electron microprobes with biological and physical materials. Methods of preparation and analysis of product data.

**NURSING N E  
(COLLEGE OF)**

**200. Nursing I**  
Spring. 3(3-0) or 4(4-0) Approval of college.  
Concepts and theories of nursing in relation to professional nursing practice. Role of nursing in contemporary society.  
Approved through Winter 1989.

**202. Introduction to Professional Nursing Practice**  
Winter. 3(3-0) Approval of college, N E 203 concurrently. Not open to Registered Nurses.  
Fundamental theoretical concepts necessary for the delivery of professional practice utilizing the nursing process. Development of interpersonal communication and documentation skills. Accountability in nursing practice.

**203. Introduction to Professional Nursing Practice Practicum**  
Winter. 3(0-9) Approval of college, N E 202 concurrently. Not open to Registered Nurses.  
Application of fundamental theoretical concepts in nursing utilizing nursing process in simulated and real life settings. Development of fundamental psychomotor nursing skills.

**212. Professional Nursing I: Basic Concepts**  
Winter. 2(2-0) Approval of college.  
Introductory concepts forming foundation of professional nursing practice. Standards of practice, code of ethics. Relationship of nursing research to practice and health promotion.

**215. Transition to Professional Nursing**  
Spring. 4(3-3) Approval of college. Open only to Registered Nurses.  
Transition issues for Registered Nurses seeking baccalaureate education. Essential theoretical and clinical components for professional nursing practice. Assessment, documentation and interpersonal skills.

**300. Nursing II**  
Fall. 10(7-9) N E 200, FCE 200, FCE 255, CEP 450.  
Independent nursing role. Holistic approach to the healthy individual. Impact of developmental levels upon client health. Application of assessment component of nursing process in simulated and actual health care settings.  
Approved through Summer 1989.

**301. Nursing III**  
Winter. 10(6-12) N E 300.  
Care of individuals at risk across the life span. Application of entire nursing process in a variety of health care settings.  
Approved through Fall 1989.

**302. Nursing IV**  
Spring. 10(5-15) N E 301, N E 441.  
Application of the nursing process to individuals in diminished-stable health. Assessment of healthy families. Relation of research findings to practice. Clinical placement in acute care settings.  
Approved through Winter 1990.

**303. Concepts of Nursing Care of the Young and Older Adult**  
Fall, Winter, Spring. 3(3-0) Approval of college, N E 304 concurrently.  
Theoretical concepts in nursing care of adult and elderly with acute alterations in health status. Prototype health states, nursing diagnosis and application of professional standards of nursing care.

**304. Practicum in Nursing Care of the Young and Older Adult**  
Fall, Winter, Spring. 4(0-12) Approval of college, N E 303 concurrently.  
Applied nursing care of adults and elderly in acute care settings. Implementation of nursing process. Application of standards of care and professional accountability.

**305. Concepts of Nursing Care of the Childbearing Family**  
Fall, Winter, Spring. 3(3-0) Approval of college, N E 306 concurrently.  
Concepts of nursing care of the childbearing family during prenatal, intrapartum and postpartum periods. Typical and atypical client care situations.

**306. Practicum in Nursing Care of the Childbearing Family**  
Fall, Winter, Spring. 4(0-12) Approval of college, N E 305 concurrently.  
Practicum in nursing care of the childbearing family in prenatal, intrapartum and postpartum periods. Implementation of nursing process in a variety of settings.

**307. Concepts of Nursing Care of Children and Their Families**  
Fall, Winter, Spring. 3(3-0) Approval of college, N E 308 concurrently.  
Concepts relative to holistic care of children in real or potential altered health states and their families. Health promotion and application of growth and development concepts.

**308. Practicum in Nursing Care of Children and Their Families**  
Fall, Winter, Spring. 4(0-12) Approval of college, N E 307 concurrently.  
Application of nursing process to children with potential or real altered health states and their families. Implementation of health promotion and growth and development concepts.

**312. Professional Nursing II: Change and the Change Process**  
Spring. 2(2-0) N E 212.  
Situations in which the nurse and client experience change. Appropriate independent nursing interventions. Therapeutic relationships and nursing advocacy techniques.

**400. Nursing V**  
Fall. 10(5-15) N E 302, PSY 425.  
Nursing of individuals in diminished-unstable and families in diminished-stable health states. Client referral and interdependent practice. Relation of research findings to practice. Clinical placement in acute care settings.  
Approved through Summer 1990.

**401. Nursing VI**  
Winter. 10(4-18) N E 400.  
Nursing of individuals in depleted-compensated and families in diminished-unstable health states. Community assessment. Application of research findings to practice. Interdependent clinical practice within health care systems.  
Approved through Fall 1990.

**403. Concepts in Advanced Nursing Care of the Young and Older Adult**  
Fall, Winter, Spring. 3(3-0) Approval of college, N E 404 concurrently.  
Concepts of care of adult and elderly clients with complex health problems. Professional, legal, ethical issues and relevant research.

**404. Practicum in Advanced Nursing Care of the Young and Older Adult**  
Fall, Winter, Spring. 5(0-15) Approval of college, N E 403 concurrently.  
Practicum in nursing care of the adult and elderly client in acute care setting. Implementation of nursing process and health promotion.

**Descriptions — Nursing  
of  
Courses**

- 405. Nursing VII**  
Spring, 10(3-21) N E 401, N E 407.  
Nursing of individuals and families with depleted health. Analysis of community health issues. Integration of theory and research from nursing and related sciences. Interdependent clinical practice within health care systems.  
Approved through Winter 1991.
- 408. Concepts of Community Health Nursing**  
Fall, Winter, Spring, 3(3-0) Approval of college, N E 409 concurrently.  
Theoretical concepts of nursing in community health. Public health trends and issues. The role, responsibilities and activities of the community health nurse.
- 409. Practicum in Community Health Nursing**  
Fall, Winter, Spring, 5(0-15) Approval of college, N E 408 concurrently.  
Application of public health nursing principles for individuals, families and aggregates. Levels of prevention and health promotion.
- 410. Concepts of Psychiatric and Mental Health Nursing**  
Fall, Winter, Spring, 3(3-0) Approval of college, N E 411 concurrently.  
Theoretical perspectives of behavior as applied to mental health nursing practice. Selected research studies relevant to nursing process as it assists in meeting client needs.
- 411. Practicum in Psychiatric and Mental Health Nursing**  
Fall, Winter, Spring, 5(0-15) Approval of college, N E 410 concurrently.  
Maladaptive patterns of emotional and behavioral expression in relation to implementation of nursing process.
- 412. Professional Nursing III: Role Development**  
Spring, 2(2-0) N E 312.  
Issues relevant to role development of a professional nurse. Legal issues in practice and value development in nursing.
- 413. Professional Nursing IV: Leadership and Management**  
Winter, 2(2-0) N E 412.  
Leadership, organizational and management theories and their impact upon nursing practice and delivery of health care within organizations. Organizational and professional factors which influence leadership effectiveness.
- 414. Professional Nursing V: Trends, Events and Issues**  
Spring, 2(2-0) N E 413.  
Past, current and future impact of selected legal, economic, educational, social, political and ethical forces on health care and nursing practice.
- 418. Theory Development in Nursing**  
Spring, 2(2-0) N E 412.  
Major theories of nursing and application to nursing process. Theory development and relationship to nursing research.
- 419. Introduction to Nursing Research**  
(N E 407.) Winter, 2(2-0) Approval of college.  
The research process, terminology, and types of investigations undertaken in nursing. Findings relevant to practice.
- 420. Senior Practicum in Nursing**  
Spring, 6(1-15) Approval of college.  
Synthesis and application of previously learned nursing knowledge as it applies to the leadership and management aspects of health care delivery in a variety of health care settings.
- 440. Clinical Problems in Adaptation**  
Spring, 5(5-0) Approval of college.  
Theoretical concepts related to individual's adaptive-maladaptive responses to stress. Emphasis on pathophysiology.
- 441. Clinical Problems in Adaptation II**  
Winter, 5(5-0) N E 440.  
Emphasis placed upon individual's adaptive-maladaptive responses. Use of clinical case presentations.  
Approved through Fall 1989.
- 490. Special Problems in Nursing**  
Fall, Winter, Spring, Summer, 1 to 6 credits. May reenroll for a maximum of 12 credits. Approval of college.  
Exploration of particular areas in nursing in greater depth and/or from a different perspective than possible within the limits of required courses.
- 490II. Honors Work**  
Fall, Winter, Spring, Summer, 1 to 12 credits. Honors College students or approval of college.
- 495. Selected Topics in Nursing**  
Fall, Winter, Spring, Summer, 2 to 6 credits. May reenroll for a maximum of 6 credits if different topic is taken. Approval of college.  
Allows exploration of unique issues in nursing. Topics to be selected from current issues.
- 511. Women and Health in the U.S.**  
Winter, 3(3-0) Graduate students; advanced undergraduate students: approval of instructor.  
Health status of women and women's roles as consumers and as providers of healthcare in the U.S. health care delivery system.
- 521. Evaluation of Health Services**  
Spring, 2 to 4 credits. Approval of instructor. Interdepartmental with and administered by the Department of Community Health Science.  
Use of experimental and quasi-experimental designs. Cost benefit and efficiency models. Assessment of health services delivery.
- 540. Family Health Seminar for the Clinical Nurse Specialist**  
Fall, 3(3-0) Majors or approval of instructor.  
Conceptual frameworks of family. Assessment of family health behavior.
- 541. Facilitating Patient Participation**  
Winter, 3(3-0) N E 564 or approval of instructor.  
Learning theories and methods to promote patient self care.
- 543. Health and Adaptation of the Elderly**  
Fall, 3(3-0) Baccalaureate degree in health science; approval of instructor. Interdepartmental with the Department of Community Health Science.  
Health and adaptation of the aged individual experiencing the normative biophysiological and psychodevelopmental changes related to the aging process.
- 544. Aging, Environment, and Health: An Interactional Approach**  
Winter, 3(3-0) Baccalaureate degree in health science; approval of instructor.  
Quality and quantity of interaction between the aged and their environment as an index of the health status of the older individual.
- 545. Human Sexuality for Health Professionals**  
Spring, 3(3-0) FCE 445 or approval of instructor.  
Focus on physiological and psychosocial components of sexual functioning, clinical assessment and diagnosis of common sexual problems and primary care treatment.
- 564. Primary Care Seminar I: Role of the Clinical Nurse Specialist**  
Fall, 2(2-0) Approval of instructor.  
Role of nurse in advanced practice. Dimensions of primary care within the health care system.
- 565. Primary Care Seminar II: Interdisciplinary Team Functioning**  
Winter, 2(2-0) Approval of instructor.  
Theories of team functioning. Communication, consultation, collaboration, conflict and decision making. Role strategies.
- 566. Primary Care Seminar III: Organizational Structure**  
Fall, 3(3-0) N E 564, N E 565 or approval of instructor.  
Organization of nursing in primary care.
- 567. Primary Care Seminar IV: Health Care Policy**  
Spring, 3(3-0) N E 564 or approval of instructor.  
Policy influence on health care delivery systems.
- 570. Nursing Theories and Conceptual Models**  
Fall, 3(3-0) STT 421 or approval of instructor.  
Issues, problems and processes of theory and concept development.
- 580A. Clinical Nurse Specialist Practicum I**  
Winter, 2(1-3) N E 564, approval of college.  
Beginning skill development in physical assessment and interviewing, history taking.
- 580B. Clinical Nurse Specialist Practicum I**  
Spring, 3(1-6) N E 580A, approval of college.  
Completion of physical examination and patient history, interpreting data. Health assessment of adult.
- 581. Clinical Nurse Specialist Practicum II**  
Fall, 5(2-9) N E 564, N E 565, N E 580B, CMS 521 or concurrently, approval of college.  
Nursing management of clients in primary care. Focus on health maintenance, health promotion and self care. Single acute problems. Longitudinal study of a family.

**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.

**599. 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, physician 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.