

171H. Honors Natural Science
(192H.) Fall. 4(2-3)

Exploration of various topics of interest and value to students eligible for Honors, especially the nature and significance of science in western culture and its interrelationship with other creative activities.

172H. Honors Natural Science
(193H.) Winter. 4(2-3) 171H.

A continuation of 171H.

173H. Honors Natural Science
(191H.) Spring. 4(2-3) 172H.

Continuation of 172H.

181. Natural Science
Fall. 4(2-3) Approval of department.

The role of methods in science emphasizing the development and modification of systems of explanation. The nature of the cell and sexual reproduction as background for Mendelian gene theory and its modern modifications. Social implications are emphasized.

182. Natural Science
Winter. 4(2-3) 181 or approval of department.

Methods in science continued with emphasis on evolutionary ideas regarding the origin of earth features and existing life forms. The origin and development of man is considered along with a number of modern problems.

183. Natural Science
Spring. 4(2-3) 182 or approval of department.

Nature of science as exemplified by ideas from physical science. The Copernican Revolution is used as an example of the science-society interaction. Modern concepts of the nature of matter are also introduced.

200. Technology and Society
Winter. 3(3-0) One term of American Thought and Language. Interdepartmental with and administered by the Engineering Department.

An attempt to describe and analyze portions of current technology and its desired and undesired consequences; and exploration of avenues for assessing such consequences for future technologies.

300. Supervised Individual Study
Fall, Winter, Spring, Summer. 2 to 4 credits. May re-enroll for a maximum of 12 credits. Approval of department.

Selected students requesting individual study of interdisciplinary problems will work under supervision of University College professors. Variable elective credit will be determined when the student secures instructor, adviser, and department approval.

321. Studies in Natural Science I
Fall. 4(2-3) Juniors.

An interdisciplinary analysis of the nature of science and its role in the human experience, with emphasis on science as a way of knowing. Subject matter used includes material from the physical sciences.

322. Studies in Natural Science II
Winter. 4(2-3) Juniors.

An interdisciplinary study of the nature of science and its role in the human experience, with emphasis on the way science affects society and is, in turn, affected by society. Subject matter used includes material from the biological sciences.

323. Studies in Natural Science III
Spring. 4(2-3) Juniors.

An interdisciplinary approach to the nature of science and its role in the human experience, with emphasis on man and his understanding of the world around him. Subject matter used includes material from the historical sciences.

401. Technology Assessment
Spring. 3(3-0) Seniors, or approval of department. Interdepartmental with and administered by the Engineering Department.

Sociotechnical evaluation of impact of proposed technologies on economic, political, and cultural aspects of society. Identification of technical strategies and social goals. Techniques of assessment.

**NATURAL SCIENCE NSC
(COLLEGE OF)**

230. The Role of the Natural Sciences in Future Environments

Fall. 4(4-0) Approval of college. Interdepartmental with the departments of Entomology, Geology, Physics, and Zoology.

Physical and biological science concepts relevant to understanding of environmental issues. Options for action in areas of population size, energy and life support system. Illustrated by case studies.

IDC. Human Adjustment to Environment
For course description see Interdisciplinary Courses.

390H. The Human Organism
Winter. 3(3-0) Juniors; approval of the Honors College.

The importance of new discoveries in biology for our understanding of the human organism with emphasis from the fields of genetics, molecular biology, behavior, developmental biology, physiology and ecology.

391H. Man's Universe
Fall. 3(3-0) Juniors; approval of the Honors College.

A creative review by senior faculty from astronomy, biochemistry, biophysics, geology, physics, and philosophy of the impact of recent space probes in developing modern concepts of the universe, the origin of the earth and life upon it.

400. Nature and Uses of Electron Microscopes
Fall. 3(2-1) MTH 111, Juniors, 1 year college physics.

Principles of electron optics including history, construction, and design of electron optical equipment. Lectures and demonstrations will be given on uses of various types of electron microscopy in representative biological and physical sciences.

435. Pest Management I: Pesticide Chemistry and Application Systems for Plant Protection
Fall. 5(3-4) CEM 132. Interdepartmental with Agriculture and Natural Resources.

A broad overview of pesticide chemistry, efficient usage, environmental fate, legislation and application techniques.

436. Pest Management II: Biological Systems for Plant Protection

Winter. 3(3-0) ENT 430, BOT 405, HRT 402 or CSC 402. Interdepartmental with Agriculture and Natural Resources.

Management of plant pests utilizing host resistance, cultural practices, legislation, and biological systems.

437. Pest Management III: Systems Management for Plant Protection

Spring. 4(3-2) 435 and 436, FSM 200 or EC 201. 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.

471. Environmental Topics in Nonmetropolitan Regions

Fall. 4(4-0) Nomination of students by own department and approved by participating faculty. Interdepartmental with Natural Resources and Agriculture and administered by Natural Resources.

Environmental topics in nonmetropolitan regions including issues on: production agriculture, service industries, nonagricultural uses, rural urban balance, discussion topics and case studies.

801. Special Problems in Electron Microscopy

Fall, Winter, Spring, Summer. 1 to 15 credits. Approval of instructor.

810. Methods in Transmission Electron Microscopy

Fall, Winter, Spring. 3(1-5) 400 or approval of instructor.

Use of the transmission electron microscopes and preparative instruments. Preparative technique for biological and nonbiological materials. Photographic principles including interpretation of micrographs.

820. Methods of Scanning Electron Microscopy

Fall, Winter, Spring. 3(1-5) 400 or approval of instructor.

Use of the scanning electron microscope and preparative equipment. Preparative technique for biological and nonbiological materials. Interpretation of micrographs.

830. Analytical Electron Microscopy

Fall. 2(1-3) 810 or 820 or approval of instructor.

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 NE

College of Natural Science

205. Foundations of Nursing
Fall. 3(2-3) Approval of school.

Introduction to principles basic in identifying nursing problems and their use in sound planning of patient care.

**Descriptions — Nursing
of
Courses**

206. Foundations of Nursing

Winter. 4(3-3) 205.

Fundamental principles are presented as they relate to the care of the whole person; identification of problems confronting the individual in illness, methods of approach to the patient as a person whereby joint effort may contribute to improved well-being and/or recovery.

207. Foundations of Nursing

Spring. 4(2-6) 206.

Continues building on concepts, using principles and knowledge introduced in the foregoing nursing courses. The laboratory now moves into the clinical area where practice in the nursing of patients becomes the focus of application of past learning and study.

303. Medical and Surgical Nursing

Fall, Spring. 12 credits. 207.

Care of individuals receiving medical and surgical therapy with emphasis on integration of preventative, emotional and social aspects of illness, pathological relationships, and all forms of therapy and rehabilitation as they relate to medical and surgical nursing. Instruction and guided practice.

304. Medical and Surgical Specialties

Winter, Summer. 12 credits. 303.

Continuation of 303.

305. Maternity Nursing

Fall, Winter, Spring, Summer. 12 credits. Approval of school.

Nursing through pregnancy, parturition, and puerperium, including care of the new born. Instruction and guided practice.

306. Nursing of Children

Fall, Winter, Spring, Summer. 12 credits. 207; FCS 262B.

Normal growth and development from infancy through adolescence, care and health supervision of well children, treatment and rehabilitation of sick and handicapped children. Instruction and guided practice.

400H. Honors Work

Fall, Winter, Spring, Summer. 1 to 12 credits. Approval of school.

402A. Psychiatric Nursing of Individuals

(402.) Fall, Winter, Spring. 6 credits. Seniors, 402B concurrently.

Provides opportunities to develop skill in utilizing concepts and principles relevant to creating and maintaining therapeutic interpersonal relationships; individual and group participation with other professionals in providing comprehensive mental health services to the mentally ill individual and his family.

402B. Group Process and Community Action in Psychiatric Nursing

(402.) Fall, Winter, Spring. 6 credits. Seniors. 402A concurrently.

Provides opportunities to develop skill in utilizing concepts, principles and dynamics of group and community interactions relevant to providing nursing intervention in programs for primary, secondary and tertiary prevention in community mental health.

403A. Introduction to Public Health

Fall, Winter, Spring. 4(4-0) Majors or approval of school.

Philosophy, development, organization, and responsibilities of public health are explored in the light of the current economic and political climate. An introduction to vital statistics, epidemiology, and environmental health is included. Provides a frame of reference for practice in this field.

403B. Public Health Nursing

Fall, Winter, Spring. 8(4-16) Seniors.

Relationships between public health nursing and other health and welfare services. Guided practice is provided for students working with individuals, families and community resources. Major focus is on health maintenance, health promotion and nursing care to the sick in their homes. Roles, responsibilities and functions of the nurse in the community are stressed.

404. Survey of Nursing

Fall, Winter, Spring. 4 credits. Seniors.

Development of nursing to present status, current problems and long-term goals. Fields of service open to graduate nurses; nursing organizations, national, state and local, their services and objectives.

406. Nursing Leadership and Management

Fall, Winter, Spring. 8(4-16) Senior majors.

Three areas of emphasis are leadership, management and problem-solving within health care work groups. Clinical experience throughout the term is continuous within one work group. Clinical laboratory in community hospitals and agencies.

490. Special Problems in Nursing

Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Approval of department.

Exploration of certain areas in nursing in greater depth and/or from a different perspective than possible within the limits of required courses.

**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.

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.

*Established July 1, 1971.

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.

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.

**OSTEOPATHIC MEDICINE OST
(COLLEGE OF)**

551. Systems Biology I

(O M 550.) Spring. 3 to 12 credits. Admission to a professional medical program.

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