

**Descriptions — Natural Science
of
Courses**

127. The Biocology of Health

Fall, Winter, Spring. 4(3-2)

Man's health examined from evolutionary and ecological viewpoints. Emphasis on the impact an increasingly man-made environment has had on the health of Western man.

129. The Biotechnology of Health

Winter, Spring. 4(4-0)

Survey of the biotechnology currently and potentially available to manage health problems. Social issues associated with this biotechnology.

135. Changing Concepts of the Universe

Fall, Winter, Spring, Summer. 4(3-2)

- A. The origin and development of scientific explanations of the physical world. The origins of modern science and scientific revolutions.
- B. The role of science in the development of western man's ideas about reality. The origin and development of mechanistic concepts of the physical world and their part in intellectual dialogue.
- C. Growth of theories of celestial motion and of matter. Their interrelationship. Impact of scientific knowledge on society. The contribution of science to clarification and solution of social problems.
- D. Man's attempts to understand the universe and his place within it. The interaction between scientific concepts and the beliefs and values of the culture in which they are proposed.

142. Life, Its Environment

(118., 193D.) Fall, Winter, Spring, Summer. 4(2-3)

Natural ecological systems and the impact of human biological and cultural development on them. Examination of specific ecological problems and the role of science in seeking solutions.

152. The Dynamics of Scientific Ideas III

(193E.) Fall, Winter, Spring. 4(2-3)

Controversies concerning interpretation of modern scientific concepts such as evolution, uncertainty and relativity are discussed in terms of developing a personal philosophy.

162. Evolution of Scientific Ideas III

(193F., 134.) Fall, Winter, Spring, Summer. 4(2-3) Any group, one course.

The nature of science, its powers, its limitations and the interaction of science and culture. Human races and mankind evolving. The biological concepts of races based on the theories of the gene, evolution, and natural selection.

171H. Man's Nature

(192H.) Fall. 4(3-2)

Various issues confronting modern man in his attempt to understand his biological self. Emphasis on the role that science can play in helping to resolve these issues.

172H. Man's Place in Nature

(193H.) Winter. 4(3-2)

Various issues confronting modern man in his attempt to understand his place in and relation to the environment. Emphasis on the role of science in helping to resolve these issues.

173H. Science-Technology and Human Values

(191H.) Spring. 4(3-2)

The nature and significance of science and technology in Western culture, with emphasis on their relationship to other creative activities, particularly those within the arts.

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.

310. Science and Pseudoscience

Spring. 3(3-0) Juniors.

Techniques of reasoned, critical analysis applied to science-related ideas such as astrology, gods from outer space, and the secret life of plants. Specific topics selected from recent writings.

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.

325. Biological and Social Aspects of Human Reproduction

Spring. 4(4-0) Juniors or approval of department.

Anatomy and physiology of human reproduction will be integrated with consideration of such current social concerns as contraception, abortion, venereal disease and drugs.

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)**

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 CSS 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

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 in Scanning Electron Microscopy

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.

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.

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.

407. Introduction to Nursing Research

Fall, Winter, Spring. 2(2-0) Seniors in School of Nursing.

Critical reading and critique of nursing research literature; define research terminology and procedures and apply to clinical nursing through discussion and writing.

408. Nursing Issues and Trends

(404.) Fall, Winter, Spring. 2(2-0)

Seniors.

Covers current issues; past, present and future trends in nursing through lectures, seminars, group discussions, special projects.

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.

550. Interdisciplinary Health Care Seminar I

Winter. 2(2-0) Approval of school.

Discusses issues, problems and theories related to interdisciplinary cooperation, collaboration, conflict and negotiation. Analysis of situations in practice will be a part of course. Focus on nurse's role and relationships in interdisciplinary provided system.

551. Interdisciplinary Health Care Seminar II

Spring. 2(2-0) Approval of school.

Application of methods of using health care evaluation to bring about changes in health care practice. Concepts of change and evaluation will be an important component. Students will design a plan of change based on evaluation from clinic practice.

552. Interdisciplinary Health Care Seminar III

Summer. 2(2-0) Approval of school.

Application of analysis of the organizational components of family practice. Identification of components of third-party payer activities, data and information systems, and analysis of classification systems, as well as patient management protocols will be included.

560. Ambulatory Nursing Seminar I

Fall. 3(3-0) Approval of school.

Introductory principles of care in family practice setting. Assists nurse in beginning to identify and develop own specialty role in setting with focus on wellness and prevention of illness.

561. Ambulatory Nursing Seminar II

Winter. 3(3-0) 560.

Implications of illness on cognitive, psychosocial, cultural, emotional status of family. Importance of nursing role in family care is stressed. Beginning discussion of caseload determination, compliance and evaluation of care.

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.

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.