The Biotechnology of Health

The origin and development of scientific concepts of the physical world and its impact on society. The nature of the cell and the growth of theories of celestial motion and their part in intellectual dialogue.

Changing Concepts of the Universe

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

The nature of the cell and its role in the human experience, with emphasis on science as a way of knowing. The Copernican Revolution is used as an example of the science-society interaction. Modern concepts of the nature of matter are also introduced.

Life, Its Environment

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

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.

The Dynamics of Scientific Ideas III

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

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

Ecological Science Ideas III

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

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.

Man's Nature

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

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

Man's Place in Nature

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.

Science-Technology and Human Values

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.

Natural Science

Fall. 4(3-2) 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.

Natural Science

Winter. 4(3-2) 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.

Natural Science

Spring. 4(3-2) 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.

Technology and Society

Winter. 3(0-0) 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.

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, advisor, and department approval.

Science and Pseudoscience

Spring. 3(0-0) Juniors.

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

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.

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 people and is, in turn, affected by society. Subject matter used includes material from the biological sciences.

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.

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.

Technology Assessment

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


NATURAL SCIENCE NSC (COLLEGE OF)

Human Adjustment to Environment

For course description, see Interdisciplinary Courses.

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 on the fields of genetics, molecular biology, behavior, developmental biology, physiology and ecology.

Man's Universe

Fall. 3(3-0) Juniors; approval of the Honors College.

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

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 microscopes in representative biological and physical sciences.

 Pest Management I: Pesticide Chemistry and Application Systems for Plant Protection

Fall. 5(3-4). CEM 158. Interdepartmental with Agriculture and Natural Resources.

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

 Pest Management II: Biological Systems for Plant Protection

Winter. 3(3-0) 430, 405, HRT 403 or CSS 405. Interdepartmental with Agriculture and Natural Resources.

Management of plant pests utilizing host resistance, cultural practices, legislation, and biological systems.
471. Environmental Topics in Nonmetropolitan Regions
Fall, 4(4-6) Nomination of students by own department and approval 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.

NURSING

College of Natural Science

205. Foundations of Nursing
Fall, 2(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.

207. Foundations of Nursing
Spring. 4(2-2) 206.
Continues building on concepts, using principles and knowledge introduced in the foregoing nursing courses. The student 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.
Approach of school. Nursing through pregnancy, parturition, and puerperium, including care of the newborn. Instruction and guided practice.

306. Nursing of Children
Fall, Winter, Spring, Summer. 12 credits. 307; FCS 265B.
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.

405H. Honors Work
Fall, Winter, Spring, Summer. 1 2 credits. Approval of instructor.

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.

Provides the opportunity 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, reponsibilities 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.

501. Interdisciplinary Health Care Seminar I
Winter. 3(3-0) 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.

502. Interdisciplinary Health Care Seminar II
Summer. 3(3-0) 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 clinical practice.

561. Ambulatory Nursing Seminar II
Winter. 3(3-0) 560.
Implications of illness on cognitive, psycho-social, cultural, emotional status of family. Importance of nursing role in family care is stressed. Beginning discussion of oaseoad determination, compliance and evaluation of care.