

1814. Natural Science (N)

Fall. 4(3-2) Not open to students with credit in N S 115. Enrollment in Remedial-Developmental Writing Program or approval of department.

Scientific methods emphasizing development and modification of explanation systems. The nature of cells and sexual reproduction as background for Mendelian gene theory and its modern modifications. Social implications are emphasized.

1824. Natural Science (N)

Winter. 4(3-2) Not open to students with credit in N S 125. N S 1814 or approval of department.

Scientific methods with emphasis on evolutionary ideas regarding origin of earth features as related to modern problems. Human origins and development are considered, with a number of modern problems.

1834. Natural Science (N)

Spring. 4(3-2) Not open to students with credit in N S 135. N S 1824 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 cosmology are also introduced.

200. Technology, Society and Public Policy

Winter. 3(3-0) Twelve credits from natural science or engineering. Interdepartmental with and administered by Engineering.

Description and analysis of certain current technologies and their consequences; exploration of avenues for assessing such consequences as an aid to formulation of public policy.

209. Humans and Disease (N)

Fall, Winter, Spring. 4(4-0)

Disease as a natural biological phenomenon and how it has influenced the human race from a worldwide perspective. Environmental and cultural factors and how these influence and interrelate with disease.

242. Wilderness Environmental Field Studies (N)

Winter, Summer. 4(4-0) Approval of instructor. Students may not receive credit in more than one of the following: N S 142, N S 142A, N S 242.

Study of ecosystem balance between physical, biological and human elements while hiking in selected wilderness areas. Requires out-of-state travel.

292. Selected Topics

Fall, Winter, Spring. 3 to 5 credits. May reenroll for a maximum of 8 credits if different topic is taken.

Interdisciplinary study of topics in the natural sciences or the natural sciences as related to the humanities and social sciences.

300. Supervised Individual Study

Fall, Winter, Spring, Summer. 2 to 4 credits. May reenroll for a maximum of 12 credits. Approval of department.

Selected students requesting individual study of interdisciplinary problems. 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.

325. Biological and Social Aspects of Human Reproduction

Fall, Winter, 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.

335. Science, Health and the Consumer

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

Scientific basis for decisions affecting individual and public health. Emphasis is on learning to use scientific principles to make rational judgments in these areas.

380. Issues in Science and Religion

Winter. 4(4-0) Juniors or approval of department. Interdepartmental with and administered by the Department of Religious Studies.

History of relationships between science and religion. Methods of science and religion. Attempts at resolution of conflicts and formation of new syntheses.

401. Engineering and Public Policy

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

Sociotechnical assessment of impact of technology on society, with analysis of the role of engineering and natural science in contributing to public policy formulation.

456. Foundations of Developmental Biology

Winter of even-numbered years. 3(3-0) ZOL 317; ZOL 417 recommended. Interdepartmental with and administered by the Department of Zoology.

Reading and discussion of original research which posed significant problems of modern developmental biology.

203. Science Problem Solving Seminar III

Spring. 2(1-3) May reenroll for a maximum of 4 credits. NSC 202, approval of instructor.

Applied experience in research. Design and implementation of simple research problems. Relationship of science and society.

305. Women in Science

Spring. 3(3-0) Introductory course in chemistry or physics or biological science or approval of instructor.

The development of women scientists of the past, present, and future will be examined. Emphasis will be on representatives from physics, biology, medicine, mathematics, and engineering.

390H. The Human Organism

Winter. 3(3-0) Approval of the Honors College or course coordinator.

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. Our Universe

Fall. 3(3-0) Approval of the Honors College or course coordinator.

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.

392H. The Uniqueness of Human Beings

Spring. 3(3-0) Approval of the Honors College, or course coordinator.

Physiological processes; behavioral mechanisms; genetic information; life support systems; physical disorders and adjustment to hostile environments.

410. Environmental Toxicology

Winter. 4(4-0) B S 212, BCH 401. Interdepartmental with Agriculture and Natural Resources.

Fate and effects of toxic chemicals in soil, plants, wildlife, and aquatic systems. Interactions between chemicals and the environment which influence their fate and ecological importance.

445. Pest Management: Pesticide Chemistry and Application Systems for Plant Protection

Fall. 5(3-4) CEM 143, ENT 425, HRT 402 or CSS 402, BOT 405 or concurrently or approval of instructor. Interdepartmental with Agriculture and Natural Resources.

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

446. Pest Management: Biological Systems for Plant Protection

Fall. 3(3-0) ENT 425, HRT 402 or CSS 402, BOT 405 or concurrently or approval of instructor. Interdepartmental with Agriculture and Natural Resources.

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

**NATURAL SCIENCE NSC
(COLLEGE OF)**

201. Science Problem Solving Seminar I

Fall. 2(2-0) MTH 108 concurrently, approval of instructor.

Problem solving principles and application of strategies to the disciplines of science and mathematics. Activities reflecting the types of problems encountered in these disciplines emphasized.

202. Science Problem Solving Seminar II

Winter. 2(2-0) NSC 201, approval of instructor.

Continuation of NSC 201. Emphasis upon problem solving in science disciplines and principles of research design.

Descriptions — Natural Science

of

Courses

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
(UC 492.) 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 (COLLEGE OF)

NE

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.

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.

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.

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.

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.

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.

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.

407. Introduction to Nursing Research
Fall. 2(2-0) N E 301, approval of college.

Lecture and independent activities are used to facilitate an understanding of the research process, terminology, and types of investigations undertaken in nursing. Findings relevant to practice are discussed.

440. Clinical Problems in Adaptation I
Fall. 5(5-0) ANT 316, PSL 240, PSL 241, MPH 234, PHM 350; approval of college.

Theoretical concepts necessary to understanding of 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.

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.

490H. 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.

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. 2(2-0) 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.