1814. Natural Science (N)
Fall. 4(3-2) Not open to students with credit in NS 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 NS 125. N 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 NS 135. N 1832 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(2-0) Twelve credits from natural science or engineering. Interdepartmental with and administered by Engineering.
Description and analysis of certain current technological issues 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: NS 142, NS 142A, N 542.
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, advisor, and department approval.

310. Science and Pseudoscience
Spring. 3(3-0) Juniors.
Techniques of reasoned, critical analysis applied to science-related topics 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.

350. 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. Attemps 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 311; 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.

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.

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 representing women in science, biology, medicine, mathematics, and engineering.

300H. 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 on 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 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(5-4) 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.
Descriptions — Natural Science of Courses

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

492. Integrative Studies (U C 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; NCE 810 or NCE 820 or NCE 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; NCE 802 or concurrently.

Use of the transmission electron microscopes and preparative equipment. 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; NCE 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; NCE 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.

301. Nursing III Winter. 10(6-12) NCE 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) NCE 301, NCE 441.


400. Nursing NCE 400.


401. Nursing VI Winter. 10(4-18) NCE 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) NCE 401, NCE 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(0-0) NCE 301, approval of college.

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

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

Theoretical concepts necessary to understanding of an individual's adaptive-maladaptive reactions to stress. Emphasis on pathophysiology.

441. Clinical Problems in Adaptation II Winter. 5(0-5) NCE 440.

Emphasis placed upon individual's adaptive-maladaptive reactions. 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 than 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.


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) NCE 584 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 psychosocial changes related to the aging process.

544. Aging, Environment, and Health: An Interdisciplinary 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) NCE 564, NCE 565 or approval of instructor.

Organization of nursing in primary care.

567. Primary Care Seminar IV: Health Care Policy Spring. 3(3-0) NCE 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.

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.

300. Nursing II Fall. 10(7-9) NCE 200, FCE 200, FCE 255, CEP 450.


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