General Education Natural Sciences (GN) at Penn State Abington

Natural Science courses geared toward non-Engineering, Math, or Science majors

“All baccalaureate degree programs require at least nine credits of natural sciences.”

The Division of Science and Engineering offers a number of courses that satisfy the General Education Natural Sciences (GN) requirements, with a few courses geared specifically for students whose degree programs do not require specific science coursework. At Abington, these courses include the following:

ASTRO 001 - Astronomical Universe
ASTRO 001 is an introductory course for non-science majors. It provides a broad introduction to Astronomy including the historical development of the subject, basic physics of gravity, light, and atoms; telescopes; planets, moons, and other objects in our solar system; exosolar planets; the Sun and other stars; the evolution of stars; the Milky Way galaxy and other galaxies; distant quasars and other active galaxies; the expanding universe; cosmology based on the Big Bang theory; and life in the universe. The goal of this course is to cover most of the areas of modern astronomy at a level which requires only basic mathematics.

ASTRO 140 - Life in the Universe
The possibility of life beyond Earth is one of the great unsolved puzzles of human thought and has been debated for millenia. An answer would fundamentally change the relationship between the human race to the rest of the Universe. Advances in modern physics and astrophysics have dramatically changed and enriched the understanding of our cosmic surroundings, but have not yet produced an unambiguous evidence concerning the extraterrestrial life. Yet, significant progress has been made on certain aspects of the problem. Recent observations of protoplanetary disks around young stars, planets around solar-type stars and a rapidly spinning pulsar (a Penn State discovery), and pervasive organic molecules throughout the Galaxy give tantalizing albeit indirect, hints in favor of the existence of nonterrestrial life. This course has Astro 1 as a prerequisite, however when the course is taught by Dr. A Schmiedekamp, she reviews the content of Astro 1 early in the semester so she does not require the pre-requisite.

BISC 001 - Structure and Function of Organisms
An exploration of how cellular structures and processes contribute to life and how life displays unity even in its diversity. Students who have passed BIOL 027, 110, or 141 may not schedule this course.
BISC 003- Environmental Science
Kinds of environments; past and present uses and abuses of natural resources; disposal of human wastes; prospects for the future. Students who have passed BIOL 220 or any other upper-level ecology course in biology may not schedule this course.

BISC 004- Human Body: Form and Function
A general survey of structure and function--from conception, through growth and reproduction, to death. Students who have passed BIOL 129 and 141 may not schedule this course.

BIOL 011- Introductory Biology I
An introduction to fundamental biological topics (including cells, energy transduction, genetics, evolution, organismal structure/function, ecology) for non-majors biology-related fields.

CHEM 001- Molecular Science
Selected concepts and topics designed to give non-science majors an appreciation for how chemistry impacts everyday life. Students who have received credit for CHEM 003, 101, or 110 may not schedule this course.

EARTH 002- The Earth System and Global Change
An interdisciplinary introduction to the processes, interactions and evolution of the earth's biosphere, geosphere and hydrosphere.

EARTH 103- Earth in the Future: Predicting Climate Change and Its Impacts Over the Next Century
Climate predictions for the coming century are utilized to examine potential impacts on regions, sectors of society, and natural ecosystems.

EARTH 104- Climate, Energy and Our Future
This course presents the past, present, and possible future response of Earth's climate to human energy use.

GEOSC 010- Geology of the National Parks
Introduction to geology, geological change, and environmental hazards, as seen in the National Parks.

GEOSC 020- Planet Earth
Nontechnical presentation of earth processes, materials, and landscape. Practicum includes field trips, study of maps, rocks, and dynamic models, introduction to geologic experimentation. (This course includes from one to several field trips for which an additional charge will be made to cover transportation.)