PHYSICS MAJOR REQUIREMENTS

This major is selected by students planning on graduate study in physics or engineering or on a physics-related career in industry.

REQUIRED COURSES:

PHYS 221/222	General Physics I, II
PHYS 305	Electronics
PHYS 308	Modern Physics
PHYS 311	Classical Mechanics I
PHYS 331	Electricity and Magnetism I
PHYS 345	Experimental Physics
PHYS 460	Seminar

And nine additional credits from courses numbered 300 or above.

SUPPORTING COURSES:

MATH 131/132	Calculus I, II
MATH 231/232	Calculus III, IV

APPLIED PHYSICS MAJOR REQUIREMENTS

This major is designed primarily for students interested in careers in engineering or technology.

REQUIRED COURSES:

PHYS 221/222	General Physics I, II
PHYS 308	Modern Physics
PHYS 460	Seminar

SUPPORTING COURSES:

MATH 131/132	Calculus I, II

Students must select additional courses as outlined in one of the following tracks.

A. Engineering Physics Track

This track cannot be taken as a dual major with a major in physics.

REQUIRED COURSES:

CHEM 161/162	General Chemistry I, II
PHYS 311/312	Classical Mechanics I, II

And four additional courses numbered 300 or above chosen from the Department of Physics.

SUPPORTING COURSES:

MATH 231/232	Calculus III, IV

B. Physics and Technology Track

This track cannot be taken as a dual major with a major in computer science or physics.

REQUIRED COURSES:

CSCI 200	Introduction to Programming
CSCI 205	Data Structures & Abstraction
CSCI 225	Mathematical Structures for Computer Science
PHYS 305	Electronics
PHYS 306	Digital Electronics

And three additional courses numbered 300 or above chosen from the Departments of Physics and Mathematics and Computer Science (at least one from each department).

C. Physical Science Track

This track cannot be taken as a dual major with a major in chemistry or in physics.

REQUIRED COURSES:

CHEM 161/162	General Chemistry I, II

And 18 additional credits in courses numbered 300 or above chosen from the Departments of Physics and Chemistry (at least six from each department).

SUPPORTING COURSES:

MATH 231/232	Calculus III, IV

PHYSICS AND MATHEMATICS MAJOR REQUIREMENTS

This major is designed primarily for students wishing to certify to teach physics and mathematics at the secondary level and may not be taken as a dual major with the major in Mathematics or Physics.

REQUIRED COURSES IN PHYSICS:

PHYS 221/222	General Physics I, II
PHYS 305	Electronics
PHYS 308	Modern Physics
PHYS 345	Experimental Physics

PHYS 460 Seminar

And three additional credits in physics from courses numbered 300 or above for a total of 24 credits.

REQUIRED COURSES IN MATHEMATICS:

MATH 131/132 Calculus I, II
MATH 216 Set Theory and Symbolic Logic
MATH 231/232 Calculus III, IV
MATH 300 Modern Geometry

And six additional credits in mathematics from courses numbered 300 or above for a total of 24 credits.

PHYSICS MINOR REQUIREMENTS

REQUIRED COURSES:

PHYS 221/222 General Physics I, II
PHYS 308 Modern Physics

And three additional physics courses numbered 300 or above.

COURSES

PHYS 110 Introductory Astronomy
4 Credits F, S

Designed to help students appreciate and understand their physical environment and the methods of physical science through the study of basic astronomy. Topics include the history of astronomy; motion of celestial objects; planets of the solar system; birth, life, and death of stars; galaxies; and cosmology. Three hours in class and two hours in laboratory per week.
General Education: Natural Science

PHYS 125 Concepts of Physics
4 Credits F, S

An introduction to the basic concepts of physics emphasizing practical applications of physical laws to common occurrences. Physical descriptions are presented on how things move, the behavior of sound and light, uses of electricity and magnetism, and the behavior of fundamental particles. Three hours in class and two hours in laboratory per week.
Prerequisites: MATH 107 or 110 or satisfactory score on the placement exam, or permission of the instructor
General Education: Natural Science

PHYS 175 Astrobiology: Searching for Life in the Universe
3 Credits I

This course is a general introduction to the burgeoning field of astrobiology in which students will explore astronomy from a search for life perspective. The approach to the search for life in this course will be the search for habitable places in the universe. The course will detail cosmology and the scientific description of the physical and astronomical conditions and processes that produce life on earth. These concepts form the foundation for the current search for additional locations in the solar system that might support life and the search for extrasolar planets throughout the universe.
Prerequisite: MATH 107 or 110 or satisfactory score on the placement exam, or permission of the instructor.

PHYS 205 Principles of Astrophysics
3 Credits I

Basic principles of physics as applied to understanding the physical nature of the solar system; the birth, life and death of stars including black holes; and the formation of the universe.
Prerequisite: MATH 120

PHYS 218, 219 College Physics I, II
4 Credits each F, S

An algebra-based exploration of the concepts of motion, forces, energy, waves, heat, electricity, magnetism, optics, and modern physics. Three hours in class and three hours in laboratory per week.
Prerequisites: MATH 120. PHYS 218 is prerequisite to PHYS 219
Alternate years – offered 2008-2009
General Education: Natural Science