PHYSICAL SCIENCE (PSCI)

PSCI-130 Introduction to Physics I 3 Credits

PSCI-130C General Physics I 3 Credits
This is a trigonometry based course in mechanics and heat. Topics include kinematics, Newton's Laws, rotational motion, fluid mechanics, and laws of thermodynamics. A knowledge of algebra, trigonometry, and vectors is necessary for success in this class. Should students not be prepared to succeed in general physics I, it is recommended that students complete MATH-170C or MATH-180C before taking general physics I. Three hours of lecture. This course fulfills the core curriculum lecture requirement in natural sciences.
Co-Requisite: PSCI-130CL
Terms Typically Offered: Fall.

PSCI-130CL General Physics I Lab 1 Credit
Laboratory experiments will demonstrate principles studied during lecture sessions. These experiments demonstrate principles in the areas of rotational motion, momentum, fluid mechanics, heat transfer, friction and conservation of mechanical energy. A knowledge of algebra, trigonometry, and vectors is necessary for success in this class. Should students not be prepared to succeed in general physics I lab, it is recommended that students complete MATH-170C or MATH-180C before taking general physics I lab. This course fulfills the core curriculum laboratory requirement in the natural sciences. Laboratory three hours. Lab fee.
Co-Requisite: PSCI-130C

PSCI-131 General Physics II 3 Credits
This is a trigonometry based course in electricity, magnetism, sound and light. Topics include mechanical waves, sound, Coulomb's Law, electrostatics, electric circuits, introductory electronics, magnetic fields, induction, wave mechanics, geometrical optics, interference, diffraction and polarization. Three hours of lecture. This course fulfills the core curriculum lecture requirement in natural science.
Prerequisite: PSCI-130C
Co-Requisite: PSCI-131L
Terms Typically Offered: Spring.

PSCI-131L General Physics II Lab 1 Credit
Laboratory experiments will demonstrate principles studied during lecture sessions. These experiments demonstrate principles in the areas of electrical current, electrical potential, electrical circuits, magnetic fields, optics, wave motion, and optics. This course fulfills the core curriculum laboratory requirement in the natural sciences. Laboratory three hours. Lab fee.
Prerequisite: PSCI-130CL
Co-Requisite: PSCI-131
Terms Typically Offered: Spring.

PSCI-215 Fundamentals of Earth Science 4 Credits
Earth science including physical and historical geology, meteorology, and descriptive astronomy; the economic, social, and philosophical aspects of the subject matter. Lab fee. (meets Natural Science/Math requirement). (School for Professional Studies Course).
Terms Typically Offered: Fall.

PSCI-215C Fundamentals of Earth Science 3 Credits
Earth Science including physical and historical geology, oceanography, and descriptive astronomy; economic, social, and philosophical aspects of the subject matter. A three-day field trip is required. This course is recommended for Liberal Studies majors. Lecture three hours each week. This course fulfills the core curriculum lecture requirement in the natural sciences. Fee for the field trip for those not concurrently enrolled in PSCI 215-CL.
Terms Typically Offered: Fall.

PSCI-215CL Fundamentals of Earth Science Lab 1 Credit
Classification of rocks, visiting various geological sites, use of topographic and geological maps, oceanographic sampling and techniques, climactic patterns, meteorological measurements, and the use of an astronomical telescope. This course fulfills the core curriculum laboratory requirement in the natural sciences. Lab and field trip fee
Co-Requisite: PSCI-215C

PSCI-216 Fundamentals of Physical Science 4 Credits
This course in physical science presents materials in physics, chemistry, and astronomy that are conceptual in nature with minimal reliance on the quantitative rules of mathematics as a tool for understanding. A strong emphasis is placed on proper use of vocabulary words to understand and explain topics in the fields of mechanics, properties of matter, heat, sound, electricity and magnetism, and light. Classroom demonstrations and videos are used to assist the student in learning the everyday principles of nature. Lab fee. (meets Natural Science/Math requirement)

PSCI-216C Fundamentals of Physical Science 3 Credits
This course in physical science considers topics in physics, chemistry, and astronomy that are conceptual in nature with minimal reliance on the quantitative rules of mathematics as a tool for understanding. A strong emphasis is placed on proper use of vocabulary words to understand and explain topics in the fields of mechanics, properties or matter, heat, sound, electricity and magnetism, and light. This course fulfills the core curriculum lecture requirement in the natural sciences. Lecture three hours per week.
Co-Requisite: PSCI-216CL
Terms Typically Offered: Spring.

PSCI-216CL Fundamentals of Physical Science Lab 1 Credit
An introduction to laboratory practice and procedure in physical science and excercises in mechanics, properties of matter, heat, sound electricity, magnetism, and light. This course fulfills the core curriculum laboratory requirement in the natural sciences. Laboratory Fee.
Co-Requisite: PSCI-216C
Terms Typically Offered: Spring.

PSCI-223C Mechanics of Solids and Fluids 3 Credits
This calculus-based course is designed for students with majors in the engineering and physical sciences. The course focuses on the mechanics of solid and fluids. Topics include statics, equilibrium of rigid bodies, free-body diagrams, pericle and rigid body kinematics, li near and angular motion, impluse and momentum, static and dynamic friction, elasticity, fluid properties, laminar and turbulent flow and fluid statics.
Prerequisite: MATH-180C
Co-Requisite: PSCI-223CL or PSCI-223CR
Terms Typically Offered: Fall.

PSCI-223CL Mechanics of Solids and Fluids Lab 1 Credit
Laboratory will include experiments in the areas of statics and dynamics of particles and ridgid bodies in two and three dimensions, static and dynamic friction, linear and angular momentum, fluid properties, laminar and turbulent flow and fluid statics. Laboratory three hours. Lab fee.
Prerequisite: MATH-180C
Co-Requisite: PSCI-223C
Terms Typically Offered: Fall.

PSCI-225 Electricity and Magnetism 3 Credits
This calculus-based course is designed for students with majors in the engineering and physical sciences. This course focuses on the mathematical and physical description of electrostatics, electric field and potential, electrical fundamentals (charge, current, voltage, resistance, power, energy), DC circuit analysis with Ohm's Law and Kirchhoff's Law, AC circuit analysis with phase diagrams, measuring devices (e.g., voltmeter, ammeter), capacitance, magnetic fields and their effect on moving charges and currents, magnetic fields produced by various current configurations, induced emf, mutual and self-inductance, basic theory of dielectrics, magnetic properties of materials and Maxwell's Equations in integral and differential form.
Prerequisite: PSCI-223C
Co-Requisite: PSCI-225L
Terms Typically Offered: Spring.

PSCI-225L Electricity and Magnetsm Lab 1 Credit
Laboratory will include experiments in the areas of electrostatics, DC and AC circuits, magnetic fields, and electromagnetic induction. Laboratory three hours. Lab fee.
Pre- or Co-Requisite: PSCI-225
Terms Typically Offered: Spring.

PSCI-227 Waves, Optics and Modern Physics 3 Credits
This course is designed for students with majors in the engineering and physical sciences. Topics covered include geometric and physical optics, waves and the interaction of light and matter, introductory quantum mechanics, solid state physics, nuclear physics and special relativity.
Prerequisite: PSCI-223, MATH-181
Co-Requisite: PSCI-227L
Terms Typically Offered: Spring, even years.

PSCI-227L Waves, Optics, and Modern Physics Lab 1 Credit
Laboratory will include experiments in the areas of mechanical wave motion, sound, interference, geometrical optics, interference, diffraction and polarization of light, radioactivity and the photoelectric effect. Laboratory three hours. Lab fee.
Pre- or Co-Requisite: PSCI-227