PHYSICS (PHYC)

PHYC 101: General Physics
(For non-science majors) The basic laws of mechanics and thermodynamics are covered. The emphasis will be on understanding the major laws of physics and the way they manifest themselves in practical applications and in laboratory experiments.
Credits: 3
College: Jefferson College of Humanities & Sciences
Prerequisites: MATH 102 or MATH 103 or MATH 111 [Min Grade: D]
Schedule Type: Lab, Lecture, Lecture/Lab, On-Line

PHYC 102: Conceptual Physics
Conceptual Physics is a one-semester course in physics for Industrial Design and other interested students. The course will include a brief introduction to some important laws of physics, and focus on sound, electricity, and electromagnetic waves. The physical principles underlying commonly used technologies such as MRI scanners, microwave ovens, and generators are discussed. The Conceptual approach used in this course puts physics before mathematics, although mathematics (algebra and trigonometry) is still used to reinforce the concepts. Interactive lectures and discussions as well as student-centered individual and group activities in the lab serve as teaching methods.
Credits: 3
College: Jefferson College of Humanities & Sciences
Prerequisites: MATH 100 or MATH 101 or MATH 102 or MATH 111 or MATH 103 [Min Grade: D]
Schedule Type: Lab, Lecture

PHYC 111: Algbra-base PHYC I-Mach&Thermo
An algebra-based course covering the basic laws of mechanics and thermodynamics. The emphasis will be on understanding the major laws of physics and the way they manifest themselves in practical applications and in laboratory experiments. Topics include Newton's laws, conservation laws, statics, torque, and viscous fluid dynamics.
Credits: 4
College: Jefferson College of Humanities & Sciences
Prerequisites: MATH 102 or MATH 103 or MATH 110 or MATH 111 [Min Grade: D]
Schedule Type: Lab, Lecture, Lecture/Lab

PHYC 112: Algbra-Based PHYS II-Electrici
An algebra-based course covering the concepts of electricity, magnetism, and optics. This course uses real world examples to enhance comprehension of physical principles. Additional topics will include radiation, imaging, and basic atomic theory.
Credits: 4
College: Jefferson College of Humanities & Sciences
Prerequisites: PHYC 111 [Min Grade: D]
Schedule Type: Lab, Lecture

PHYC 201: Physics I
(required for science and Engineering majors) A calculus-based course emphasizing Newton's three laws of motion and the conservation laws of energy,linear momentum and angular momentum as first integrals of the dynamics. Additional topics in mechanics include stress and strain, simple harmonic motion and hydrostatics. Absolute temperature scales, thermal expansion, specific heats, methods of transfer of heat energy, ideal gases and real gases are considered before studying the first and second laws of thermodynamics, with the concept of entropy emphasized in the latter.
Credits: 3
College: Jefferson College of Humanities & Sciences
Prerequisites: MATH 111 [Min Grade: D]
Corequisites: PHYC 201L
Schedule Type: Lecture, On-Line

PHYC 201L: Physics I Lab
In this one-credit laboratory course students perform, analyze and submit lab reports based on experiments which test the theories developed in mechanics and heat and they take quizzes based both on the lab instructions and material from the lectures.
Credits: 1
College: Jefferson College of Humanities & Sciences
Corequisites: PHYC 201
Schedule Type: Lab, On-Line

PHYC 203: Phys II: Waves, Elec, & Mag
The mathematical representation of traveling sinusoidal waves and standing-wave patterns is emphasized. Applications are made to sound waves. Electrostatics include Gauss's law, electric potentials and the potential gradient equation. The field concepts are used to interpret elementary D.C. circuits including Kirchhoff's Rules. Capacitors as circuit elements and dielectrics are also studied. The effects of the magnetic field, its sources, induced EMFs and magnetic materials are considered. Series AC circuits conclude electromagnetism. Geometric optics includes lenses, mirrors and optical instruments. Physical optics includes interference and polarization of light waves.
Credits: 3
College: Jefferson College of Humanities & Sciences
Prerequisites: PHYC 201 and PHYC 201L [Min Grade: D]
Corequisites: PHYC 203L
Schedule Type: Lecture

PHYC 203L: Physics II Lab
In this one-credit laboratory course students perform, analyze and submit lab reports based on experiments which test the theories developed in waves, electricity and magnetism, and light. They take quizzes based both on the lab instructions and material from the lectures.
Credits: 1
College: Jefferson College of Humanities & Sciences
Corequisites: PHYC 203
Schedule Type: Lab

PHYC 314: Elements of Quantum Mechanics
The experimental background of quantum mechanics is reviewed before its postulates are introduced, and the theory is used to solve one-dimensional examples including the harmonic oscillator, then ' in three dimensions ' the hydrogen atom, electron spin and atomic spectra. Applications to chemistry are stressed.
Credits: 3
College: Jefferson College of Humanities & Sciences
Prerequisites: MATH 225 and PHYC 201 [Min Grade: D]
Schedule Type: Lecture