

Physics

PHYS 112 Science of Music Laboratory 1 credit

Attribute: LS

This course will include activities related to vibrations, sound waves and other waves, musical instruments, and room acoustics. This course fulfills a four-credit lab science requirement when taken with the corresponding three-credit course, PHYS 113 The Science of Music. Two laboratory hours per week.

Pre/Co-requisite: PHYS 113 The Science of Music.

PHYS 113 The Science of Music 3 credits

Attributes: LA LS SC

This course explains aspects of music in terms of physical laws and principles. It begins with an introduction to musical terminology and an overview of basic physics, including vibrations, resonance, and wave motion. It continues with a description of sound waves, and uses standing waves to analyze string, wind, and percussion instruments. The timbre of complex sounds, harmony, and temperaments are also discussed, as well as the ear and musical perception, and concert hall acoustics. Electronic music and sound recording are optional topics. No background in science or music is necessary. This course fulfills a four-credit lab science requirement when taken with the corresponding one-credit course, PHYS 112 Science of Music Laboratory.

PHYS 120 Science of Fire Behavior and Combustion 3 credits

Attributes: LA SC

Designed for fire-science students, this course explores the theories and fundamentals of how and why fires start, spread, and are controlled using the basic principles of physics and chemistry.

Prerequisites: CHEM 131 Survey of Chemistry or higher.

PHYS 132 Concepts of Technical Physics I 3 credits

Attributes: LA SC

This is the first semester of a one-year introduction to the principles and applications of technical physics. This course is specifically designed to satisfy the minimum physics requirement for the Architectural Technology, Diesel Technology, and HVAC programs. Emphasis is placed on understanding through problem solving and applications. Topics include vectors, force systems, kinematics, dynamics and Newton's laws, work, conservation of energy and momentum, and rotational motion. Note: This course can be substituted for PHYS 131 Survey of Physics in the Architectural Technology, Diesel Technology, and HVAC programs and options. Two lecture and two laboratory hours per week.

Pre/Co-requisite: MATH 203 College Algebra or higher; waiver by placement testing results; or departmental approval.

PHYS 133 Concepts of Technical Physics II 3 credits

Attributes: LA SC

This course is a continuation of PHYS 132 Concepts of Technical Physics I. Topics include properties of solids and fluids, heat and thermodynamics, wave motion, sound, electrostatics, electric current, electromagnetism, light, and optics. Note: This course can be substituted for Concepts of Technical Physics in the Architectural Technology, Diesel Technology, and HVAC programs and options. Two lecture and two laboratory hours per week.

Prerequisite: PHYS 132 Concepts of Technical Physics I; or departmental approval.

PHYS 151 College Physics I 4 credits

Attributes: LA LS SC

This is the first semester of a one-year introduction to the principles and applications of physics. Emphasis is placed on understanding through problem solving. Topics are vectors, force systems, kinematics, dynamics and Newton's Laws, work, conservation of energy and momentum, and rotational kinematics and dynamics. Three lecture and two laboratory hours per week.

Pre/Co-requisite: MATH 203 College Algebra or higher; waiver by placement testing results; or departmental approval.

PHYS 152 College Physics II 4 credits

Attributes: LA LS SC

This is a continuation of PHYS 151 College Physics I. Problem solving ability is further developed. Topics include properties of solids and fluids, heat and thermodynamics, wave motion, sound, electrostatics, electric current, electromagnetism, light, and optics. Three lecture and two laboratory hours per week.

Prerequisite: PHYS 151 College Physics I; or departmental approval.

PHYS 161 General Physics I 4 credits

Attributes: LA LS SC

This course is an introduction to classical physics using calculus. Topics are vectors and scalars, kinematics and dynamics, work, energy, momentum, the conservation laws, and rotational kinematics and dynamics. The basic concepts of calculus are introduced within the context of the course material. This course is usually offered in the fall. Three lecture and two laboratory hours per week.

Pre/Co-requisite: MATH 221 Calculus I; waiver by placement testing results; or departmental approval.

PHYS 162 General Physics II**4 credits**

Attributes: LA LS SC

A continuation of PHYS 161 General Physics I, topics in this course include heat and thermodynamics, oscillatory and wave motion, electrostatics, electric current, electromagnetism, Maxwell's Equations, light, and optics. This course is usually offered in the spring. Three lecture and two laboratory hours per week.

Prerequisite: PHYS 161 General Physics I; or departmental approval.