

# PHYSICS (PHYS)

## PHYS 0000A. Preparation for Calculus-Based Physics

*Units: 4*

Prerequisite: Completion of MATH 27 with grade of "C" or better

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 72 lecture

Intended to provide stronger preparation for Physics 205 than Physics 105. Focuses on measurement and the development of the conceptual and mathematical frameworks necessary for problem-solving in physics. (not transferable)

## PHYS 0010. Basic Concepts in Physics

*Units: 3*

Prerequisite: Eligibility for Math D

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 lecture

Introduction to the laws of motion, properties of matter, heat, sound, electricity, magnetism, light, atomic and nuclear physics, and relativity. Emphasis on familiar phenomena in everyday life. Intended for nonscience majors. (CSU, UC-with unit limitation)

## PHYS 0010L. Basic Concepts in Physics Laboratory

*Unit: 1*

Formerly known as PHYS 11

Prerequisite: Completion with grade of "C" or better or concurrent enrollment in PHYS 10

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 laboratory

An optional laboratory course taken in conjunction with PHYS 10. Integrates abstract concepts from PHYS 10 into concrete applications through experimentation. Topics include the SI system of measurement; motion; fluids and properties of matter; thermodynamics; waves; sound; electricity and magnetism; and light and optics. (CSU, UC-with unit limitation)

## PHYS 0028. Independent Study

*Units: 1-3*

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

## PHYS 0105. General Physics I

*Units: 4*

Formerly known as PHYS 2A (PHYS 105 and 105L, combined)

Prerequisite: Completion of MATH 27 or equivalent with grade of "C" or better

Corequisite: Concurrent enrollment in PHYS 105L

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 72 lecture

Noncalculus introduction to the principles of mechanics, properties of matter and heat. Emphasis on applications relevant to several majors, including premedical, pre dental, optometry, forestry, architecture, and biological science. (combined with PHYS 105L, C-ID PHYS 105) (CSU, UC-with unit limitation)

## PHYS 0105L. General Physics I Laboratory

*Unit: 1*

Formerly known as PHYS 2A (PHYS 105 and 105L, combined)

Prerequisite: Completion of MATH 27 or high school trigonometry with grade of "C" or better

Corequisite: Concurrent enrollment in PHYS 105

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 laboratory

Laboratory portion of PHYS 105. Noncalculus introduction to the principles of mechanics, properties of matter and heat. Emphasis on applications relevant to several majors, including premedical, pre dental, optometry, forestry, architecture, and biological science. (combined with PHYS 105, C-ID PHYS 105) (CSU, UC-with unit limitation)

## PHYS 0110. General Physics II

*Units: 4*

Formerly known as PHYS 2B (PHYS 110 and 110L, combined)

Prerequisite: Completion of PHYS 105 and 105L with grades of "C" or better

Corequisite: Concurrent enrollment in PHYS 110L

Hours: 72 lecture

Noncalculus introduction to the principles of waves, sound, light, electricity, magnetism, and modern physics. Emphasis on applications relevant to several majors, including premedical, pre dental, optometry, forestry, architecture, and biological science. (combined with PHYS 110L, C-ID PHYS 110) (CSU, UC-with unit limitation)

## PHYS 0110L. General Physics II Laboratory

*Unit: 1*

Formerly known as PHYS 2B (PHYS 110 and 110L, combined)

Prerequisite: Completion of PHYS 105 and 105L with grades of "C" or better

Corequisite: Concurrent enrollment in PHYS 110

Hours: 54 laboratory

Laboratory portion of PHYS 110. Noncalculus introduction to the principles of waves, sound, light, electricity, magnetism, and modern physics. Emphasis on applications relevant to several majors, including premedical, pre dental, optometry, forestry, architecture, and biological science. (combined with PHYS 110, C-ID PHYS 110) (CSU, UC-with unit limitation)

## PHYS 0140. Survey of Chemistry and Physics

*Units: 4*

Also known as CHEM 140

Prerequisite: Completion of MATH D with grade of "C" or better, or placement by matriculation assessment process

Hours: 108 (54 lecture, 54 laboratory)

A conceptual introduction to the basic principles of physics and chemistry including matter, physical and chemical properties, forces and motion, energy, electromagnetism, electromagnetic waves, atomic structure, bonding, solutions and chemical reactions. The interdependence of chemistry and physics will be emphasized. This course is intended for non-science majors. (C-ID PHYS 140) (CSU, UC)

**PHYS 0205. Principles of Physics: Mechanics***Units: 4*

Formerly known as PHYS 4A (PHYS 205 and 205L, combined)

Prerequisite: Completion of MATH 30 and 31 with grades of "C" or better (MATH 31 may be taken concurrently); AND PHYS A or PHYS 105 and 105L, or high school physics with grade(s) of "C" or better

Corequisite: Concurrent enrollment in PHYS 205L

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 72 lecture

Calculus-based introduction to the principles of kinematics, dynamics, energy, momentum, rotational motion, gravitation and fluids. The Physics 205/210/215 sequence presents the general principles and analytical methods used in physics for physical science and engineering majors. (combined with PHYS 205L, C-ID PHYS 205) (CSU, UC-with unit limitation)

**PHYS 0205L. Principles of Physics Laboratory: Mechanics***Unit: 1*

Formerly known as PHYS 4A (PHYS 205 and 205L, combined)

Prerequisite: Completion of MATH 30 and 31 with grades of "C" or better (MATH 31 may be taken concurrently); AND PHYS A, PHYS 105 and 105L, or high school physics with grade(s) of "C" or better

Corequisite: Concurrent enrollment in PHYS 205

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 laboratory

Laboratory portion of PHYS 205. Calculus-based introduction to the principles of kinematics, dynamics, energy, momentum, rotational motion, gravitation and fluids. The Physics 205/210/215 sequence presents the general principles and analytical methods used in physics for physical science and engineering majors. (combined with PHYS 205, C-ID PHYS 205) (CSU, UC-with unit limitation)

**PHYS 0210. Principles of Physics: Electricity and Magnetism***Units: 3*

Formerly known as PHYS 4B (PHYS 210 and 210L, combined)

Prerequisite: Completion of PHYS 205, PHYS 205L, and MATH 31 with grades of "C" or better

Corequisite: Concurrent enrollment in PHYS 210L

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 lecture

Electrostatics, AC and DC circuits, magnetism, Maxwell's Equations, electromagnetic waves, and the electric and magnetic properties of matter. The 205-210-215 sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (combined with PHYS 210L, C-ID PHYS 210) (CSU, UC-with unit limitation)

**PHYS 0210L. Principles of Physics Laboratory: Electricity and Magnetism***Unit: 1*

Formerly known as PHYS 4B (PHYS 210 and 210L, combined)

Prerequisite: Completion of PHYS 205, PHYS 205L, and MATH 31 with grades of "C" or better

Corequisite: Concurrent enrollment in PHYS 210

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 laboratory

Laboratory portion of PHYS 210. Electrostatics, AC and DC circuits, magnetism, Maxwell's Equations, electromagnetic waves, and the electric and magnetic properties of matter. The 205-210-215 sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (combined with PHYS 210, C-ID PHYS 210) (CSU, UC-with unit limitation)

**PHYS 0210R. Problem Solving for Physics 210***Unit: 1*

Formerly known as PHYS 4Y

Corequisite: Concurrent enrollment in PHYS 210

Hours: 18 lecture

Optional problem solving course to accompany PHYS 210. Includes electric forces and fields, electrical potential, capacitors and dielectrics, magnetism, electromagnetic waves, and DC and AC circuits. (CSU, UC-with unit limitation)

**PHYS 0215. Principles of Physics: Heat, Waves and Modern Physics***Units: 3*

Formerly known as PHYS 4C (PHYS 215 and 215L, combined)

Prerequisite: Completion of PHYS 205, PHYS 205L, and MATH 31 with grades of "C" or better

Corequisite: Concurrent enrollment in PHYS 215L

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 lecture

Thermodynamics, kinetic theory of gases, waves, geometrical and physical optics, sound, and modern physics. The 205-210-215 sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (combined with PHYS 215L, C-ID PHYS 215) (CSU, UC-with unit limitation)

**PHYS 0215L. Principles of Physics Laboratory: Heat, Waves and Modern Physics***Unit: 1*

Formerly known as PHYS 4C (PHYS 215 and 215L, combined)

Prerequisite: Completion of PHYS 205, PHYS 205L, and MATH 31 with grades of "C" or better

Corequisite: Concurrent enrollment in PHYS 215

Advisory: Eligibility for ENGL 11 strongly recommended

Hours: 54 laboratory

Laboratory portion of PHYS 215. Covers topics of thermodynamics, kinetic theory of gases, waves, geometrical and physical optics, sound, and modern physics. (combined with PHYS 215, C-ID PHYS 215) (CSU, UC-with unit limitation)

**PHYS 0215R. Problem Solving for Physics 215***Unit: 1*

Formerly known as PHYS 4Z

Corequisite: Concurrent enrollment in PHYS 215

Hours: 18 lecture

Optional problem solving course to accompany PHYS 215. Includes thermodynamics, mechanical waves, optics, and modern physics. (CSU, UC-with unit limitation)