

# PHYSICS (PHYS)

## PHYS C110 3 Units (54 lecture hours)

### Conceptual Physics

**Advisory:** A course taught at the level of beginning algebra or appropriate math placement.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: No credit for PHYS C110, PHYS C110L or PHYS C140, CHEM C140 if taken after PHYS C120 or PHYS C185; PHYS C110, PHYS C110L and PHYS C140, CHEM C140 combined: maximum credit, 4 units.

A survey of the fundamental phenomena and laws in physics related to forces and motion, energy and work, electricity and magnetism, and modern physics that emphasizes conceptual scientific thinking. Graded or Pass/No Pass option.

## PHYS C110L 1 Unit (54 lab hours)

### Conceptual Physics Lab

**Prerequisite(s):** PHYS C110 or concurrent enrollment.

**Advisory:** A course taught at the level of beginning algebra or appropriate math placement.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC: Credit Limitation: No credit for PHYS C110, PHYS C110L or PHYS C140, CHEM C140 if taken after PHYS C120 or PHYS C185; PHYS C110, PHYS C110L and PHYS C140, CHEM C140 combined: maximum credit, 4 units.

Formerly PHYS C111. This course is designed to supplement Physics C110. The student will do laboratory exercises which illustrate some of the phenomena discussed in Physics C110. Letter Grade only.

## PHYS C120 4 Units (54 lecture hours; 54 lab hours)

### Algebra Based Physics: Mechanics

**Prerequisite(s):** MATH C120 with a grade of C or better.

**Advisory:** PHYS C110 or concurrent enrollment.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC: Credit Limitation: PHYS C120, PHYS C125 and PHYS C185, PHYS C280 combined: maximum credit, 1 series; No credit for PHYS C110, PHYS C110L or PHYS C140, CHEM C140 if taken after PHYS C120 or PHYS C185.

The course covers Mechanics, Heat, and Sound. It satisfies the physics requirement of biological science programs (except University of California Programs) and technical programs, except physics, chemistry, or engineering. It satisfies requirements as liberal arts elective. Letter Grade only. **C-ID:** PHYS 105, PHYS 100 S.

## PHYS C125 4 Units (54 lecture hours; 54 lab hours)

### Algebra Based Physics: Electricity and Magnetism

**Prerequisite(s):** PHYS C120.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC: Credit Limitation: PHYS C120, PHYS C125 and PHYS C185, PHYS C280 combined: maximum credit, 1 series.

The course covers Electricity, Magnetism, Light/Optics, and Modern Physics. It satisfies the physics requirement of biological science programs and technical programs, except physics, chemistry, or engineering. It satisfies requirements as a liberal arts elective. Letter Grade only. **C-ID:** PHYS 110, PHYS 100 S.

## PHYS C140 4 Units (54 lecture hours; 54 lab hours)

### Survey of Chemistry and Physics

**Advisory:** A course taught at the level of beginning algebra or appropriate math placement.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC: Credit Limitation: CHEM C110, CHEM C130, CHEM C140 and PHYS C140 combined: maximum credit, 1 course; No credit for PHYS C110, PHYS C110L or PHYS C140, CHEM C140 if taken after PHYS C120 or PHYS C185; PHYS C110, PHYS C110L and PHYS C140, CHEM C140 combined: maximum credit, 4 units; No credit for CHEM C140, PHYS C140 if taken after CHEM C180 or CHEM C220.

An investigation of basic principles of physics and chemistry including matter, physical and chemical properties, energy, motion, light, atomic structure, bonding, solutions and chemical reactions. The interdependence of chemistry and physics will be emphasized. This course is intended for non-science majors. This course is identical to CHEM C140. Letter Grade only. **C-ID:** PHYS 140.

## PHYS C185 4 Units (54 lecture hours; 54 lab hours)

### Calculus Based Physics: Mechanics

**Prerequisite(s):** MATH C180.

**Advisory:** MATH C185.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC: Credit Limitations: PHYS C120, PHYS C125 and PHYS C185, PHYS C280 combined: maximum credit, 1 series; No credit for PHYS C110, PHYS C110L or PHYS C140, CHEM C140 if taken after PHYS C120 or PHYS C185.

The Physics C185, C280, and C285 sequence is required for science and engineering majors who need calculus-based physics. Topics include the kinematics and dynamics of translational and rotational motion of objects, conservation laws, Hooke's Law, simple harmonic motion, wave motion, fluid statics, and dynamics. Letter Grade only. **C-ID:** PHYS 205.

## PHYS C280 4 Units (54 lecture hours; 54 lab hours)

### Calculus Based Physics: Electricity and Magnetism

**Prerequisite(s):** MATH C185 and PHYS C185.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC: Credit Limitation: PHYS C120, PHYS C125 and PHYS C185, PHYS C280 combined: maximum credit, 1 series.

Continuation of PHYS C185. The course covers electricity and magnetism. Topics include electric fields, Gauss's Law, electric potential, capacitance and dielectrics, current and resistance, direct current circuits, magnetic fields, sources of the magnetic fields, Faraday's Law, inductance, alternating current circuits, and electromagnetic waves. Letter Grade only. **C-ID:** PHYS 210.

## PHYS C285 4 Units (54 lecture hours; 54 lab hours)

### Calculus Based Physics: Modern Physics

**Prerequisite(s):** MATH C185 and PHYS C185; or PHYS C280.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC.

This course covers thermodynamics, light, optics, and modern physics. Topics include heat transfer and the kinetic theory of gases, geometric optics, wave optics, an introduction to relativity, an introduction to quantum mechanics and quantum theory, and the structure of matter. Letter Grade only. **C-ID:** PHYS 215.