

# PHYSICS (PHYS)

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## PHYS-110 Descriptive Physics 3 Units

54 hours lecture; 54 hours total

A nonmathematical descriptive introduction to physics for non-science majors. Numerous slides and demonstrations will be used to illustrate the fundamental laws and applications of mechanics, heat, electricity, optics, atomic and nuclear physics.

Transfers to both UC/CSU

## PHYS-111 Descriptive Physics Laboratory 1 Unit

54 hours lab; 54 hours total

**Prerequisites or Corequisites:** Concurrent enrollment in or successful completion of PHYS-110 with a minimum grade of C.

A non-mathematical, descriptive physics laboratory for non-science majors. This class is an optional companion to the lecture course PHYS 110, Descriptive Physics. Laboratory exercises will be used to explore the fundamental laws and applications of mechanics, heat, electricity, optics, atomic and nuclear physics.

Transfers to both UC/CSU

## PHYS-120 General Physics 1 4 Units

54 hours lecture; 72 hours lab; 126 hours total

**Prerequisite:** Completion of MATH-106 and MATH-108 with a minimum grade of C.

This algebra-based physics course covers mechanics, fluids, wave motion, and heat. Biological and medical applications are emphasized.

Transfers to both UC/CSU

## PHYS-121 General Physics 2 4 Units

54 hours lecture; 72 hours lab; 126 hours total

**Prerequisite:** Completion of PHYS-120 with a minimum grade of C.

This algebra-based physics course covers electricity, magnetism, optics, and modern physics. Biological and medical applications are emphasized in this course.

Transfers to both UC/CSU

## PHYS-140 Physics for Scientists & Engineers 1 4 Units

54 hours lecture; 72 hours lab; 126 hours total

**Prerequisite:** Completion of MATH-120 with a minimum grade of C.

**Prerequisites or Corequisites:** Concurrent enrollment in or previous completion of MATH-121 with a minimum grade of C.

This is a calculus-based introduction to the principles of mechanics and wave motion. Topics include measurements, vectors, kinematics and dynamics, linear and circular motion, gravitation, work and mechanical energy, conservation of energy, linear and angular momentum, rotational motion, static equilibrium, oscillations, and fluid mechanics.

Transfers to both UC/CSU

## PHYS-199 Independent Study in Physics 1-3 Units

54-162 hours lab; 54-162 hours total

For the physics students who wish to pursue topics not included in the regular curriculum. Possible projects include a research paper, a computer project, sophisticated problem-solving, or innovative experiments in physics. Students must contract with a physics instructor specifying course content and hours/week. Credit/No Credit grading.

Transfers to CSU only

## PHYS-240 Physics for Scientists & Engineers 2 4 Units

54 hours lecture; 72 hours lab; 126 hours total

**Prerequisite:** Completion of PHYS-140 and MATH-121 with a minimum grade of C.

This is a calculus-based introduction to the principles of heat, electricity, and magnetism. Topics include temperature, kinetic theory of gases, heat, laws of thermodynamics, electric charge and electric field, Gauss's Law, electric potential, capacitance, resistance, electric current, DC circuits, magnetism, sources of magnetism, Faraday's Law, inductance, and AC circuits.

Transfers to both UC/CSU

## PHYS-241 Physics for Scientists & Engineers 3 4 Units

54 hours lecture; 72 hours lab; 126 hours total

**Prerequisite:** Completion of PHYS-240 with a minimum grade of C.

This is a calculus-based introduction to electromagnetic waves, physical optics, relativity, and atomic and quantum physics. Topics include Maxwell's Equations and electromagnetic waves, light, lenses, diffraction and polarization, relativity, quantum mechanics, molecules and solids, nuclear physics and radioactivity, nuclear energy, elementary particles, and astrophysics and cosmology.

Transfers to both UC/CSU