

## Physics (PHYS)

The study of **Physics** is the study of the universe, beginning with the fundamental structures of nature such as energy and matter. Ideas in Physics have led to great developments such as such as relativity, superconductivity, the semiconductor chip, lasers, and string theory.

**Careers in Physics** include: basic and applied research, engineering, science education, and almost any field requiring you to think analytically about whole systems. It is also excellent preparation for higher educational pursuits in professional schools in medicine and patent law.

In the **Physics Department at College of Alameda**, conceptual understanding, problem-solving, and laboratory exercises are well integrated in the curriculum. You will spend time working with other students in class, discussing physics concepts and solving problems together.

### PHYS 3A

#### General Physics

- 5 units, 4 hours lecture, 3 hours laboratory (GR)
- Prerequisite or Co-requisite: MATH 3A

Acceptable for credit: CSU, UC Comprehensive study of major topics of physics: Motion, forces, gravity, energy, momentum, rotation, equilibrium, fluids, oscillations, waves, sound, and thermodynamics for students majoring in the biological or medical sciences. 1902.00 AA/AS area 1, CSU area B, IGETC area 5 C-ID PHYS 205, PHYS 100S when taken w/PHYS 3B

### PHYS 3B

#### General Physics

- 5 units, 4 hours lecture, 3 hours laboratory (GR)
- Prerequisite: PHYS 3A

Acceptable for credit: CSU, UC Comprehensive study of major topics of physics: Electric and magnetic forces, fields, and energy, DC and AC circuits, light, relativity, quantum physics, atoms, molecules, and nuclei for students majoring in the biological or medical sciences. 1902.00

AA/AS area 1, CSU area B, IGETC area 5 C-ID PHYS 205, PHYS 100S when taken w/PHYS 3B

### PHYS 4A

#### General Physics with Calculus

- 5 units, 4 hours lecture, 3 hours laboratory (GR)
- Prerequisite: MATH 3A and
- Prerequisite or Co-requisite: MATH 3B
- Recommended preparation: PHYS 10
- Acceptable for credit: CSU, UC

Comprehensive study of major topics of physics: Motion, forces, gravity, energy, momentum, rotation, equilibrium, fluids, oscillations, waves, and sound. 1902.00

AA/AS area 1; CSU area B1, B3; IGETC area 5A, 5C C-ID PHYS 205

### PHYS 4B

#### General Physics with Calculus

- 5 units, 4 hours lecture, 3 hours laboratory (GR)
- Prerequisite: PHYS 4A and MATH 3B and
- Prerequisite or Co-requisite: MATH 3C
- Acceptable for credit: CSU, UC

Comprehensive study of major topics of physics: Thermodynamics, electric forces and fields, magnetic forces and fields, electricity, and AC and DC circuits. 1902.00

AA/AS area 1; CSU area B1, B3; IGETC area 5A, 5C

### PHYS 4C

#### General Physics with Calculus

- 5 units, 4 hours lecture, 3 hours laboratory (GR)
- Prerequisite: PHYS 4B and MATH 3C and
- Prerequisites or Co-requisites: MATH 3E and MATH 3F
- Acceptable for credit: CSU, UC

Comprehensive study of major topics of physics: Light, interference, relativity, quantum physics, atoms, molecules, and nuclei. 1902.00

AA/AS area 1; CSU area B1, B3; IGETC area 5A, 5C

### PHYS 10

#### Introduction to Physics

- 4 units, 4 hours lecture (GR or P/NP)
- Recommended preparation: MATH 201 or 210D, and MATH 202
- Not open for credit to students who have completed or are currently enrolled in PHYS 2A-2B, 3A-3B, or 4A-4B-4C
- Acceptable for credit: CSU, UC

Elementary study of major topics of physics: Motion, forces, gravity, matter, energy, momentum, rotation, oscillation, sound, heat, thermodynamics, electromagnetism, light, quantum physics, atoms, nuclei, and relativity. 1902.00

AA/AS area 1; CSU area B1; IGETC area 5A

### PHYS 10L

#### Introduction to Physics Laboratory

- 1 unit, 3 hour laboratory (GR or P/NP)
- Prerequisites: PHYS 10 or
- Corequisites: PHYS 10
- Recommended Preparation: MATH 201 or 202 or 210D
- Acceptable for Credit: CSU
- Not open for credit to students who have completed or are currently enrolled in PHYS 2A-2B, 3A-3B, or 4A-4B-4C.

Practical application of basic concepts and principles of physics: Motion, forces, gravity, matter, energy, momentum, rotation, oscillation, sound, heat, thermodynamics, electromagnetism, light, quantum physics, atoms, nuclei, and relativity. 1902.00

**PHYS 49****Independent Study in Physics**

- .5-5 units, .5-5 hours lecture (GR)
- Acceptable for credit: CSU

In-depth exploration of an area or problem of the student's choice not covered by regular catalog offerings in Physics. Student must obtain approval from an appropriate faculty member. For more details, see the section on independent study in the college catalog. 1902.00