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.

These are the **Program Learning Outcomes**:

1. Students apply the concepts of physics to everyday situations.
2. Students develop descriptions of physical systems using mathematics and calculate measurable quantities.
3. Students set up laboratory equipment safely, plan and carry out experimental procedures, identify possible sources of error, reduce and interpret data, and prepare clear written reports.

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 48AA-FZ
Selected Topics in Physics
.5-5 units, 0-5 hours lecture, 0-15 hours laboratory (GR or P/NP)
Acceptable for credit: CSU
See section on Selected Topics. 1902.00

PHYS 49
Independent Study in Physics
.5-5 units, .5-5 hours lecture (GR)
Acceptable for credit: CSU
See section on Independent Study. 1902.00

PHYS 248AA-FZ
Selected Topics in Physics
.5-5 units, 0-5 hours lecture, 0-15 hours laboratory (GR or P/NP)
See section on Selected Topics. 1902.00