

## PHYSICS (PHYS)

### About the program

Physics is the study of the fundamental processes of nature, including motion, light, heat, and matter. Physics employs theoretical models involving force, momentum, energy, fields, waves, and particles to describe nature and through mathematics formulate precisely testable, quantitative predictions. Physics is an experimental science where all theories are subject to independently repeated, quantitative verification based on data from carefully designed experiments.

### Degrees/Certificates within this Program:

- Associate in Arts Degree for Transfer, Physics

### Transfer Opportunities

Learn more about transferring with an Associate Degree for Transfer at [www.adegreewithaguarantee.com](http://www.adegreewithaguarantee.com) and [www.redwoods.edu/transfer](http://www.redwoods.edu/transfer)

### For more information

- Counseling & Advising, 707-476-4150

### Associate in Science in Physics for Transfer

	Units	CSU GE	IGETC Area	C-ID Descriptor
<b>Required Core</b>	<b>24.0</b>			
PHYS 4A Calculus Based Physics: Mechanics	4.0	B1, B3	5A, 5C	PHYS 205
PHYS 4B Calculus Based Physics: Electricity and Magnetism	4.0			PHYS 210
PHYS 4C Calculus Based Physics: Heat, Optics, Waves, and Modern Physics	4.0			PHYS 215
MATH 50A Differential Calculus	4.0	B4	2A	MATH 210
MATH 50B Integral Calculus	4.0			MATH 220
MATH 50C Multivariable Calculus	4.0			MATH 230
<b>Total Units for the Major:</b>	<b>24.0</b>			
General Education (CSU GE or IGETC) units:		39.0	37.0	
Elective (UC or CSU Transferable) units:		as needed to complete 60 units total		
Total Degree Units (maximum):		60.0	60.0	

### Suggested Program Sequence

For information about the program length and suggested sequence of courses for this degree, please see an Academic Advisor.

### About this Degree

The Associate in Science in Physics for Transfer degree provides a student with the general introductory requirements for transferring to a CSU or other four-year school to earn a degree in physics, applied physics, or astronomy. As well, this degree is a good fit for students intending to pursue engineering. This preparation includes the following student learning outcomes: 1) Apply methods of scientific inquiry to investigate questions, and explain the limitations of this approach; 2) Perform experiments, collect and analyze data, evaluate sources of uncertainty, and determine if an experiment correctly verifies theory within expected errors; 3) Use concepts from physics theories to analyze and describe natural phenomena; and 4) Use physical laws, theories, and appropriate mathematics to make quantitative predictions. This program includes twelve units of physics course work and three semesters of calculus. For students intending to pursue astronomy it is highly recommended to select a course in astronomy as the elective for this degree.

Students transferring to a campus that does accept the Associate in Arts in Political Science for Transfer will be required to complete no more than 60 units after transfer to earn a bachelor's degree. To meet the requirements for this degree the students must:

1. Complete a minimum of 18 semester units in the major coursework.
2. Complete the California State University General Education Breadth pattern (CSU GE-Breadth); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern).
3. Have a minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework.

This degree may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system. In all cases, students should consult with an academic advisor for more information on university admission and transfer requirements.