

# PHYSICS, ASSOCIATE IN SCIENCE DEGREE FOR TRANSFER

**Banner Code:** 2\_AST\_PHYS

**Control Number:** 33205

**Financial Aid Eligible**

The Associate in Science in Physics for Transfer degree (AS-T in Physics) is intended for students who plan to complete a bachelor's degree in Physics at a CSU campus. Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that accepts this degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. Consult with a counselor for more information on university admission and transfer requirements. Prospective students interested in this degree are encouraged to meet with a counselor to develop an educational goal plan that best meets their goals and needs. On completion of the program, the student will have gained proficiency in all of the main areas of classical physics (mechanics, waves, sound, thermodynamics, electromagnetism, and optics) and will have been exposed to some of the more modern concepts of physics, including special relativity, atomic and nuclear physics.

This is the major pattern for students planning to transfer to a CSU. It is strongly recommended that students contact a GWC counselor to develop an official Student Educational Plan to discuss non-CSU universities.

## Program Level Learning Outcomes

Upon completion of this program, students will be able to:

1. Understand the basic principles and concepts of physics.
2. Use these principles and concepts in solving problems in the various areas of physics.
3. Understand the methods of physicists.
4. Appreciate the importance of physics.
5. Appreciate that physics is an active, unfinished area of work in which many people are, today, actively engaged.

## Associate Degree for Transfer Graduation Requirements

Associate Degrees for Transfer require students to meet the following requirements:

- Completion of 60 semester units or 90 quarter units of degree-applicable courses,
- Minimum overall grade point average of 2.0,
- Minimum grade of "C" (or "P") for each course in the major, and
- Completion of IGETC and/or CSU GE-Breadth.

**Students should consult a GWC counselor in order to select the best pathway to meet their educational goals. For students who intend to transfer, the choice of general education will be specific to both their major and transfer institution.**

Course	Title	Units
<b>Required Core</b>		
PHYS G185	Calculus Based Physics: Mechanics	4
PHYS G280	Calculus Based Physics: Electricity/Magnetism	4
PHYS G285	Calculus Based Physics: Modern	4
MATH G180	Calculus 1	4
MATH G185	Calculus 2	4
MATH G280	Calculus 3	4
<b>Major Total</b>		<b>24</b>
<b>GE Pattern (CSU GE-Breadth or IGETC)</b>		<b>37-39</b>
<b>Total units that may be double-counted</b>		<b>7</b>
<b>Transferable Electives (as needed to reach 60 units)</b>		<b>1-3</b>
<b>Total Units</b>		<b>60</b>

## Recommended Program Sequence

These sequences are general course maps for students to finish all major and general education requirements for two-year completion of degrees, completion of short-term certificates, and/or fulfillment of transfer requirements. However, this may not be an appropriate path for all students. The two-year sequence is based on English and Math placement and meeting other course prerequisites. **Students are advised to meet with a GWC Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

### Year 1:

Course	Title	Units
<b>Semester 1</b>		
MATH G180	Calculus 1	4
ENGL G100	Freshman Composition <sup>A</sup>	4
Area C1: Arts course		3
Area E: Lifelong Learning & Self-Development course		3
<b>Units</b>		<b>14</b>

Course	Title	Units
<b>Semester 2</b>		
PHYS G185	Calculus Based Physics: Mechanics	4
MATH G185	Calculus 2	4
Area A3: Critical Thinking course		3-4
Area A1: Oral Communication course		3
<b>Units</b>		<b>14-15</b>

### Year 2:

Course	Title	Units
<b>Semester 3</b>		
PHYS G285	Calculus Based Physics: Modern	4
MATH G280	Calculus 3	4
Area D: Social & Behavioral Science course		3
PSCI G180	American Government (Area D: Social & Behavioral Science course)	3
or PSCI G181	American Government: The Politics of Race and Ethnicity	
<b>Units</b>		<b>14</b>

Course	Title	Units
<b>Semester 4</b>		
PHYS G280	Calculus Based Physics: Electricity/ Magnetism	4
Area C: Arts & Humanities course		3
Area F: Ethnic Studies course		3
HIST G170	History Of The United States To 1876 (Area C2: Humanities course)	3
or HIST G175	History of the United States Since 1876	
Area B2: Life Science course (without lab)		3
<i>Units</i>		16
<b>Total minimum units required</b>		<b>60</b>

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Program sequence may not be recommended for students who self-place into ENGL G100S. Students should see a Counselor for appropriate advisement.