

# ADT IN PHYSICS

Physics, a natural science, is the scientific study of matter and energy and of the interaction between the two. This Associate Degree for Transfer in Physics (ADT) provides students with an understanding of the physical world, both conceptually and in the language of mathematics. The degree prepares students for pre-professional careers and for curriculum at four year institutions leading to a baccalaureate degree in areas such as physics, astrophysics, geophysics, mathematics, and engineering. Students who complete this degree will be guaranteed admission with junior status to the California State University system, and will be given priority admission to our local CSU campus.

## Learning Outcomes

### A.S.-Transfer Degree Level Student Learning Outcomes

Students completing the Physics A.S.-Transfer Degree will:

1. Understand and apply fundamental physics principles conceptually and mathematically using the appropriate computational skills.
2. Distinguish between scientific and non-scientific questions and methods by critically analyzing scientific information.
3. Develop problem-solving, decision-making, and critical thinking skills and apply them in order to develop an understanding of interactions in the physical world.
4. Think logically and coherently about technical/scientific issues in order to understand the complex problems involved in science and engineering and to gain an appreciation for the global social and political impact of scientific endeavors.
5. Be adept at using computers for word processing, data acquisition and analysis, and/or web-based research as appropriate for each course. For laboratory courses, students will demonstrate fundamental aptitudes in the proper use of mechanical, electrical and/or other appropriate devices.

## Requirements

Students receiving this transfer degree must meet the following requirements:

1. Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following:
  - a. The Intersegmental General Education Transfer Curriculum (IGETC) (<http://catalog.citruscollege.edu/programs-study/graduation-requirements-associate-degree/general-education-requirements-transfer-csu-uc-igetc-option-iii/>) or the California State University General Education - Breadth Requirements (<http://catalog.citruscollege.edu/programs-study/graduation-requirements-associate-degree/general-education-requirements-transfer-csu-csuge-option-ii/>).
  - b. A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.
2. Obtainment of a minimum grade point average of 2.0.

ADTs also require that students must earn a "C" (or "P") or better in all courses required for the major or area of emphasis.

Code	Title	Units
<b>Required courses:</b>		
PHYS 201	Physics A: Mechanics	5
PHYS 202	Physics B: Thermodynamics and Electromagnetism	5
PHYS 203	Physics C: Waves, Optics & Modern Physics	5
MATH 190	Calculus with Analytic Geometry I	5
MATH 191	Calculus with Analytic Geometry II	5
MATH 210	Calculus with Analytic Geometry III	5
<b>Total Units</b>		<b>30</b>

## Curriculum Map

### 3-Year Curriculum Map Example

This map represents one possible pathway through the program and is only for reference.

\*It is highly recommended that you make an appointment (<https://www.citruscollege.edu/stdntsrvcounsel/Pages/ApptSchedule.aspx>) to create a customized education plan that fits your needs.

Note: Co-requisite MATH course (2 units) and/or substitute ENGL 101E (5 units) may be needed based on placement.

Course	Title	Units
<b>Fall Term 1</b>		
COUN 206	Pathways to Careers in STEM	3
MATH 175	Pre-Calculus	6
ENGL 101 or ENGL 101H	Reading and Composition or Reading and Composition - Honors	4
	<b>Units</b>	<b>13</b>
<b>Winter Term 1</b>		
ENGL 290 or ENGL 293 or ENGL 293H or ENGL 298 or KIN 166 or PHIL 101 or SOC 130	Ethnic Voices in Film or Children's Literature or Children's Literature - Honors or Literature of the Bible or American Food And Culture: Global Origins, History, and Current Impacts or Great Religions of the World or Introduction to LGBTQ Studies	3
	<b>Units</b>	<b>3</b>
<b>Spring Term 1</b>		
MATH 190	Calculus with Analytic Geometry I	5
CHEM 110	Beginning General Chemistry	5
ENGL 104 or ENGL 104H	Argumentative Writing and Critical Thinking or Argumentative Writing and Critical Thinking - Honors	3
ARCH 250 or ARCH 251 or ART 100 or ART 105 or ART 108 or ART 110 or ART 199 or ART 199H or DANC 102 or MUSE 113 or THEA 101 or THEA 101H	History of Architecture: Prehistory to Mannerism or History of Architecture: Baroque to the Present Day or Art History - Fundamentals of Global Art History or Art History - Topics in Contemporary Art or History of Photography or Introduction to the Visual Arts or Motion Picture Appreciation or Motion Picture Appreciation - Honors or History of Dance or History of Rock and Roll or Introduction to Theatre Arts or Introduction to Theatre Arts - Honors	3
	<b>Units</b>	<b>16</b>

Course	Title	Units	Course	Title	Units
<b>Summer Term 1</b>			ETHN 101	Introduction to Ethnic Studies	3
ARCH 250	History of Architecture: Prehistory to Mannerism	3	or ETHN 116	or Introduction to Chicano/Latino Studies	
or ARCH 251	or History of Architecture: Baroque to the Present Day		<b>Units</b>		<b>13</b>
or ART 100	or Art History - Fundamentals of Global Art History		<b>Total Units</b>		<b>102</b>
or ART 105	or Art History - Topics in Contemporary Art				
or ART 108	or History of Photography				
or ART 110	or Introduction to the Visual Arts				
or ART 199	or Motion Picture Appreciation				
or ART 199H	or Motion Picture Appreciation - Honors				
or DANC 102	or History of Dance				
or ENGL 290	or Ethnic Voices in Film				
or ENGL 293	or Children's Literature				
or ENGL 293H	or Children's Literature - Honors				
or ENGL 298	or Literature of the Bible				
or KIN 166	or American Food And Culture: Global Origins, History, and Current Impacts				
or MUSE 113	or History of Rock and Roll				
or PHIL 101	or Great Religions of the World				
or SOC 130	or Introduction to LGBTQ Studies				
or THEA 101	or Introduction to Theatre Arts				
or THEA 101H	or Introduction to Theatre Arts - Honors				
<b>Units</b>		<b>3</b>			
<b>Fall Term 2</b>					
MATH 191	Calculus with Analytic Geometry II	5			
CHEM 111	General Chemistry I	5			
PHYS 201	Physics A: Mechanics	5			
or PHYS 201H	or Physics A: Mechanics - Honors				
<b>Units</b>		<b>15</b>			
<b>Winter Term 2</b>					
SPCH 100	Interpersonal Communication	3			
or SPCH 100H	or Interpersonal Communication - Honors				
or SPCH 101	or Public Address				
or SPCH 101H	or Public Address - Honors				
or SPCH 106	or Small Group Communication				
<b>Units</b>		<b>3</b>			
<b>Spring Term 2</b>					
MATH 210	Calculus with Analytic Geometry III	5			
CHEM 112	General Chemistry II	5			
PHYS 202	Physics B: Thermodynamics and Electromagnetism	5			
or PHYS 203	or Physics C: Waves, Optics & Modern Physics				
<b>Units</b>		<b>15</b>			
<b>Summer Term 2</b>					
POLI 103	American Government and Politics	3			
or POLI 103H	or American Government and Politics - Honors				
<b>Units</b>		<b>3</b>			
<b>Fall Term 3</b>					
MATH 211	Differential Equations	5			
CS 111	Introduction to Programming Concepts and Design	4			
PHYS 210	Introduction to Computational Physics	1			
PHYS 202	Physics B: Thermodynamics and Electromagnetism	5			
or PHYS 203	or Physics C: Waves, Optics & Modern Physics				
<b>Units</b>		<b>15</b>			
<b>Winter Term 3</b>					
BIOL 104	Biology: Contemporary Topics	3			
<b>Units</b>		<b>3</b>			
<b>Spring Term 3</b>					
MATH 212	Introduction to Linear Algebra	4			
CS 225	Object Oriented Programming	3			
HIST 107	History of the United States before 1877	3			
or HIST 107H	or History of the United States before 1877 - Honors				
or HIST 108	or History of the United States since 1877				
or HIST 108H	or History of the United States since 1877 - Honors				
or HIST 111	or History of the African-Americans to 1876				
or HIST 112	or History of the African-Americans since 1876				
or HIST 160	or History of Women in the United States				

## Career Information

### Career Opportunities

There are a variety of careers you can do with this major.

To explore more about this major, schedule an appointment (<https://www.citruscollege.edu/stdntsrvc/center/Pages/ApptSchedule.aspx>) with a career counselor.