

**SCIENCE, ENGINEERING & MATH**

**Program Description:** Physics allows us to understand, predict, and harness the basic forces of our universe. The Physics program at ACC provides a broad education in the physical sciences and prepares students to transfer to a four-year institution with training in areas like geophysics, biophysics, astronomy, molecular physics, elementary particle physics, and more.

The Associate of Science in Physics is intended to match, within the constraints of the Core Curriculum, the course of study for the first two years in a typical university baccalaureate physics program.

To receive an Associate of Science in Physics, students must: (a) make a minimum grade of C in all required math and science courses and (b) have an overall GPA of 2.0 or greater.

**Contact:**

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**Department Website**

www.austincc.edu/physics

*Use this Program Map to choose courses with your college advisor and track your progress towards milestones and completion of program.*

<b>Pre-Degree Requirements</b>		
<b>Program Specific</b>	<b>Reading and Writing Placement <i>Placements based on TSI</i></b>	<b>Mathematics Placement <i>Placements based on TSI</i></b>
Prerequisites for MATH 2413 – Calculus I: <input type="checkbox"/> MATH 1314 – College Algebra <input type="checkbox"/> MATH 1316 – Trigonometry <input type="checkbox"/> MATH 2412 – Precalculus: Functions and Graphs	<input type="checkbox"/> Basic Developmental Courses <input type="checkbox"/> ESOL Courses <input type="checkbox"/> INRW Courses	<input type="checkbox"/> NCBM and MATD courses paired with MATH courses <input type="checkbox"/> NCBM and MATD courses
<b>SEMESTER-BY-SEMESTER PROGRAM PLAN FOR FULL-TIME STUDENTS</b>		
<i>Plans can be modified to fit the needs of part-time students by adding more semesters</i>		

<b>Semester 1</b>	<b>CR</b>	<b>Advising Notes</b>
EDUC 1300 – Effective Learning: Strategies for College Success	3	<u>Note:</u> All first time Austin Community College (ACC) students with fewer than 12 SCH of successful college credit must take EDUC 1300 in their first semester at ACC. All other students may select either EDUC 1300 or a SPCH course from the Component Area Option section of the Core Curriculum Course List. See an advisor or a full-time faculty member in Physics for more information.
MATH 2413 – Calculus I	4	<u>Prerequisite(s):</u> MATH 2412 with minimum grade C; OR satisfactory scores on both the ACC Mathematics Assessment and Higher Level Placement Tests.
ENGL 1301 – English Composition I	3	<u>Prerequisite(s):</u> TSI complete in reading and writing or exempt.
CHEM 1311 – General Chemistry I – Lecture	3	<u>Prerequisite(s):</u> High school chemistry or CHEM 1305/CHEM 1105 and MATH 1314 or equivalent academic preparation. <u>Corequisite(s):</u> CHEM 1111.
CHEM 1111 – General Chemistry I - Lab	1	<u>Prerequisite(s):</u> High school chemistry or CHEM 1305/CHEM 1105 and MATH 1314 or equivalent academic preparation. <u>Corequisite(s):</u> CHEM 1311.
	<b>14</b>	<b>Program Semester Hours / Meet with your advisor</b>
<b>Semester 2</b>		
MATH 2414 – Calculus II	4	<u>Prerequisite(s):</u> MATH 2413 with a C or better or the equivalent.
ENGL 1302 – English Composition II	3	<u>Prerequisite(s):</u> ENGL 1301 or equivalent with minimum grade of C.
PHYS 2425 – Engineering Physics I	4	<u>Note:</u> Students lacking one full year of (recent) high school physics should take PHYS 1401 before enrolling in PHYS 2425. All students must complete MATH 2413 before enrolling in PHYS 2425.
HIST 1301 – United States History I	3	<u>Note:</u> Or select from: HIST 2301, HIST 2327, or HIST 2381. HIST 2301 and HIST 2381 may only be taken once.
	<b>14</b>	<b>Program Semester Hours / Meet with your program advisor</b>



Semester 3		
MATH 2415 – Calculus III	4	<u>Prerequisite(s)</u> : MATH 2414 with a C or better or its equivalent. <u>Note</u> : MATH 2420 is no longer required for the degree, but is strongly recommended.
PHYS 2426 – Engineering Physics II	4	<u>Prerequisite(s)</u> : Grade of C or better in 1) PHYS 2425 or equivalent AND 2) credit in MATH 2414 or equivalent. <u>Note</u> : Credit for PHYS 2425 and credit for MATH 2414 are strictly required prerequisites for PHYS 2426.
GOVT 2305 – United States Government	3	
HIST 1302 – United States History II	3	<u>Note</u> : Or select from: HIST 2301, HIST 2328, or HIST 2381. HIST 2301 and HIST 2381 may only be taken once.
ARTS 1303 – Art History I (Prehistoric to the 14 <sup>th</sup> Century)	3	<u>Note</u> : Or choose a course from the Creative Arts section of the Core Curriculum Course List. Check with prospective transfer institutions for transferability.
	<b>17</b>	<b>Program Semester Hours / Meet with your program advisor</b>
Semester 4		
COSC 1336 – Programming Fundamentals I	3	
ENGL 2332 – World Literature: Ancient World through 17th Century	3	<u>Prerequisite(s)</u> : ENGL 1302 or equivalent with minimum grade of C. <u>Note</u> : Or choose a course from the Language, Philosophy, and Culture section of the Core Curriculum Course List. Check with prospective transfer institutions for transferability.
PHIL 2306 – Ethics	3	<u>Note</u> : Or choose a course from the Component Area Option section of the Core Curriculum Course List. Check with prospective transfer institutions for transferability.
ECON 2301 – Principles of Macroeconomics	3	<u>Note</u> : Or choose a course from the Social and Behavioral section of the Core Curriculum Course List. Check with prospective transfer institutions for transferability.
GOVT 2306 – Texas State and Local Government	3	<b>ACHIEVEMENT</b> : Associate of Science degree in Physics
	<b>15</b>	<b>Program Semester Hours</b>
<b>Total Program Hours 60</b>		

Please always check online at [catalog.austincc.edu](http://catalog.austincc.edu) or meet with your academic or program advisor to ensure that you are viewing the latest and most accurate information.

## Career & Transfer Resources

ACC's Career & Transfer websites provide detailed, guided information on career exploration and transfer.

[www.austincc.edu/career](http://www.austincc.edu/career)

[www.austincc.edu/transfer](http://www.austincc.edu/transfer)

For further information regarding this specific program, please see the Career & Transfer Resources supplement provided in the next section of this Program Map.



## Program Map

# Physics

Degree: Associate of Science (AS) in Physics

Career & Transfer Resources Updated 11/26/18

### Transfer Information

The Associate of Science in Physics provides a transfer pathway to a 4-year institution where students can earn a bachelor's degree. Students are strongly encouraged to select a transfer destination by the time they have completed 24 semester credit hours.

**Common majors students pursue at a 4-year institution include:** Physics, Geophysics, Astronomy, Engineering Physics

**Transfer Guides:** *The universities listed here do not constitute an ACC endorsement. Transfer course evaluations and determination of what courses will count toward a bachelor's degree are made by the receiving transfer institution.*

**Texas State University:** <https://www.admissions.txstate.edu/future-students/transfer/tpg>

**The University of Texas at Austin:** <https://admissions.utexas.edu/apply/transfer-resources/acc-transfer-guides>

**Texas A&M University:** <http://admissions.tamu.edu/transfer/majors>

**Southwestern University:** <http://www.southwestern.edu/departments/physics/index.php>

**Texas Tech University:** <https://catalog.ttu.edu/content.php?catoid=9&navoid=996>

**The University of Texas at San Antonio:** [http://www.utsa.edu/advise/1617\\_transfer/acc.html](http://www.utsa.edu/advise/1617_transfer/acc.html)

**Reverse Transfer:** If you transfer to a four-year institution prior to graduating from ACC, you can still earn your associate degree through reverse transfer. More information on the reverse transfer process and requirements can be found at [www.austincc.edu/students/transfer-services/reverse-transfer](http://www.austincc.edu/students/transfer-services/reverse-transfer).

**Additional Transfer Resources:** ACC's transfer website provides information on additional colleges & universities: <http://www.austincc.edu/transferguides>. Students are encouraged to consult with a faculty advisor, [area of study advisor](#), and/or their chosen transfer institution to ensure courses taken at ACC will apply toward their bachelor's degree program.

### Career Information

An associate degree in Physics fosters development of skills in critical and creative thinking, problem-solving, quantitative and empirical reasoning, personal and social responsibility, communication, and teamwork.

#### Common Job Titles

Physics Teachers, Postsecondary. Biophysics Scientist, Health Physicist, Physicist, Research Physicist, Geophysicist, Geoscientist, Astronomer, Astronomy Professor, Astrophysicist, Aerospace Engineer, Natural Sciences Manager, Nuclear Engineers, Biochemists and Biophysicists, Atmospheric and Space Scientists, Nuclear Technicians

*Many career opportunities in this field require completion of a bachelor's degree or higher.*

#### Regional Labor Market Information

Physics Teachers, Postsecondary: New workers generally start around \$31,294. Normal pay for Physics Teachers, Postsecondary is \$61,152 per year, while highly experienced workers can earn as much as \$104,721. Over the last year, 4 companies have posted 12 jobs for Physics Teachers, Postsecondary in this region. There are currently 10,812 Physics Teachers, Postsecondary that are employed in Austin-Round Rock, TX.

Source: <https://austincc.emsicc.com/careers/physics-teacher-postsecondary>

**Career and labor market research tools** (see Quick Reference Guide at <http://www.austincc.edu/career>):

EMSI: <https://austincc.emsicc.com/>, Bureau of Labor Statistics: <http://www.bls.gov/ooh/>, O\*NET: <https://www.onetonline.org/>

**Career Resources:** ACC's career services website provides information on career exploration and employment at <http://www.austincc.edu/career>. Students are encouraged to consult with their [area of study advisor](#) for additional career assistance. The above information is provided as a guide and reference tool for occupations related to this program. This is not a guarantee of job placement in any of these occupations after successful completion of an ACC program. The common job titles listed are representative titles and are provided for career research. These are not the only occupations possible in this area of study.