

ASTRONOMY, ASSOCIATE IN SCIENCE DEGREE

Financial Aid Eligible
Banner Code: 1_AS_ASTR
Control Number: 35182

Upon completion of the requirements for the Associate in Science Degree in Astronomy, students will be prepared to transfer to CSU/UC and obtain a baccalaureate degree in the following majors: astronomy, astrophysics, or physics. This degree is also a stepping stone toward research internships, entry-level opportunities within the field, e.g., observatory and planetarium operations, and provides a solid foundation for pursuing an advanced degree.

The department strongly recommends that all declared Astronomy majors complete the following courses prior to transfer:

Course	Title	Units
CS A131	Python Programming I	4
MATH A185/A185H	Calculus 2	4
MATH A280/A280H	Calculus 3	4
MATH A285/A285H	Introduction to Linear Algebra and Differential Equations	4

Program Outcomes

1. Describe the constituents of the Universe and the relevant physical processes underlying their behavior.
2. Become familiar with the methods of observational astronomy and the analysis of data.
3. Develop the necessary knowledge and skills to analyze evidence and evaluate claims as related to astronomy.
4. Be prepared for admission to California State University/University of California schools in astronomy/astrophysics.

Associate in Science Degree Requirements

1. **UNIT REQUIREMENT** - 60 UNITS, with at least a 2.0 grade point average. At least 12 of the units must be earned at OCC, with a minimum of one course taken for a letter grade. At least 3 units in an advanced course from the program must be completed at OCC. A student must be enrolled at the time of application for graduation. Units earned at an accredited college or university on a credit/no credit basis will be counted toward the degree requirements of the college, to a maximum of 15 units.
2. **MAJOR REQUIREMENT** - Complete the AA or AS major requirements as detailed in the Degree and Certificate section of this catalog.
3. **MATHEMATICS REQUIREMENT** - Demonstrate competence in mathematics by either obtaining a satisfactory grade (grade of "C" or better or "pass") in a mathematics course at or above the level of Intermediate Algebra as demonstrated by prior coursework, or by demonstrating competency that is comparable through the completion of a college-level math course that has Intermediate Algebra as a prerequisite: Psychology A160 or Math A100 or higher, with the exception of Math A220.
4. **GENERAL EDUCATION REQUIREMENT** - Students may choose to complete Option 1 (OCC AA GE) ([https://catalog.cccd.edu/orange-](https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-arts-general-education-option-1/)

<https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-arts-general-education-option-1/>), Option 1 (OCC AS GE) (<https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-science-general-education-option-1/>), Option 2 (CSU GE) (<https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-2/>), or Option 3 (IGETC (<https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-3/>)) (<https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-3/>)) to satisfy the general education requirement. See the General Education Patterns section of this catalog for more information.

Course	Title	Units
Required Courses		
ASTR A100/A100H	Introduction to Astronomy	3
ASTR A100L/A100M	Introduction to Astronomy Laboratory	1
ASTR A200	Introduction to Astrophysics	4
Astronomy Electives		
Select one of the following:		3
ASTR A101	Planetary Astronomy	
ASTR A102	Stellar Astronomy	
ASTR A103	Cosmology	
ASTR A104	Galactic Astronomy	
Math/Physics Required Courses		
Select three of the following:		13-16
MATH A180/ A180H	Calculus 1	
and		
MATH A185/ A185H	Calculus 2	
or		
MATH A182H	Calculus 1 and 2 Honors	
PHYS A185/ A185H	Calculus Based Physics: Mechanics	
and		
PHYS A280	Calculus Based Physics: Electricity/ Magnetism	
or PHYS A285	Calculus Based Physics: Modern	
Program Major Units		24-27
AS General Education Option 1, 2, or 3		Varies
Transferable electives as needed to satisfy unit requirement		Varies
Total Units		60