

# ASTROPHYSICAL AND PLANETARY SCIENCES - MINOR

Declaration of a minor in Astrophysical and Planetary Sciences is open to any student enrolled at CU-Boulder. Coursework applied to the astronomy minor may be applied to another major or towards General Education requirements.

## Requirements

Coursework applied to the minor may be applied toward General Education requirements or to a major offered by another department (except the Physics Plan 2 astrophysics focus major). Minimum requirements for a minor include:

- A minimum of six ASTR courses (18-21 credits), including at least three advanced courses (numbered above 3500; 9-10 credits).
- All coursework applied to a minor must be completed with a grade of C- or better; no pass/fail work may be applied. The GPA for all coursework completed in the minor department must be equal to 2.00 (C) or higher.
- Students pursuing an individually structured major or a major in distributed studies are not eligible to earn a minor.
- Students are allowed to apply no more than three courses (9 credits), including two advanced courses (6 credits), of transfer work toward a minor.
- Many of the classes listed below have corequisite or prerequisite mathematics and/or physics courses. Students are responsible to check and meet these requisites.

## Required Courses and Credits

The minor requires a minimum of 6 approved courses.

Code	Title	Credit Hours
<b>Elementary</b>		
Select a maximum of two courses from the following:		6-8
ASTR 1030	Accelerated Introductory Astronomy 1 <sup>1</sup>	
ASTR 1040	Accelerated Introductory Astronomy 2 <sup>1</sup>	
ASTR 2000	Ancient Astronomies of the World	
ASTR 2010	Modern Cosmology-Origin and Structure of the Universe	
ASTR 2020	Space Astronomy and Exploration	
ASTR 2030	Black Holes	
ASTR 2040	The Search for Life in the Universe	
ASTR 2500/ ASEN 1400	Gateway to Space	
ASTR 2600	Introduction to Scientific Programming	
ASTR 3300	Extraterrestrial Life	
<b>Intermediate</b>		
ASTR 2100	Fundamental Concepts in Astrophysics <sup>2</sup> <sub>3</sub>	3
<b>Advanced</b>		
Select one of the following upper-division course sequences:		6
<i>Planetary Sequence:</i>		

ASTR 3720 & ASTR 3750	Planets and Their Atmospheres and Planets, Moons, and Rings	
<i>Astrophysics Sequence:</i>		
ASTR 3730 & ASTR 3830	Astrophysics 1 - Stellar and Interstellar and Astrophysics 2 - Galactic and Extragalactic	
Select a minimum of one of the following:		3-4
ASTR 3400	Research Methods in Astronomy	
ASTR 3510	Observations and Instrumentation 1	
ASTR 3520	Observations and Instrumentation 2	
ASTR 3560	Astronomical Instrumentation Laboratory	
ASTR 3710	Formation & Dynamics of Planetary Systems	
ASTR 3720	Planets and Their Atmospheres	
ASTR 3730	Astrophysics 1 - Stellar and Interstellar	
ASTR 3740	Cosmology and Relativity	
ASTR 3750	Planets, Moons, and Rings	
ASTR 3760	Solar and Space Physics	
ASTR 3830	Astrophysics 2 - Galactic and Extragalactic	
ASTR 4330	Cosmochemistry	
ASTR 4840	Independent Study	
ATOC 4720	Atmospheric Dynamics	

**Total Credit Hours** **18-21**

- <sup>1</sup> Or ASTR 1010 and/or ASTR 1020 with permission.
- <sup>2</sup> If they plan to take Calculus 3 (MATH 2400 or APPM 2350), then students should replace ASTR 2100 with an additional ASTR class (either upper or lower division).
- <sup>3</sup> Some upper division ASTR courses require a prerequisite of Modern Physics (PHYS 2130 or PHYS 2170) or ASTR 2100. We recommend students discuss the classes they're interested in with an ASTR advisor to plan accordingly.

Additional information is available from any faculty mentor. See the department's Undergraduate Studies (<https://www.colorado.edu/aps/undergraduate-students/prospective-students/>) webpage.