

## Astronomy

**ASTRONOMY**

Charles Ramos, Dean  
Sciences Division  
Physical Sciences Building, Room 263

**Possible career opportunities**

Considered a branch of physics, astronomy is really a marriage of the physical sciences from planetary science and atmospheric science to physics and chemistry. Study in astronomy prepares students for careers in scientific research, systems analysis and engineering, as well as software engineering and development. More than two years of college study is usually required.

**ASTRO-110 The Visible Universe**

- 3 units LR
- *IGETC: 5A; CSU GE: B1; DVC GE: II*
  - *54 hours lecture per term*
  - *Advisory: College-level reading and writing are expected. MATH-085 or equivalent*
  - *Note: Students who have successfully completed ASTRO-112 should not enroll in ASTRO-110. Students who have successfully completed ASTRO-112 will not receive credit for ASTRO-110. The planetarium sky provides students with the opportunity to observe concepts presented in class for in-person and hybrid classes on the Pleasant Hill campus only.*

This introductory course focuses on observational astronomy. Students will visit the planetarium to identify constellations, discover how the rotation and orbit of the Earth affects our view of the night sky, distinguish the causes of the Moon phases and how to predict eclipses. Students will be introduced to light and energy output from the cosmos and use planetary orbits to find planets outside of our Solar System. CSU, UC (credit limits may apply to UC - see counselor)

**ASTRO-112 The Visible Universe With Laboratory**

- 4 units LR
- *IGETC: 5A, 5C; CSU GE: B1, B3; DVC GE: B3*
  - *54 hours lecture/54 hours laboratory per term*
  - *Advisory: College-level reading and writing are expected. MATH-085 or equivalent*

This introductory course focuses on observational astronomy. Students will visit the planetarium to identify constellations, discover how the rotation and orbit of the Earth affects our view of the night sky, distinguish the causes of Moon phases, and predict eclipses. Students will be introduced to light and energy output from the cosmos and use planetary orbits to find planets outside of our Solar System. The laboratory component will involve the study of the fundamentals of astronomy and will include investigations of the sun, moon, planets, stars, and galaxies. Telescopes and other instruments will be used by students to gather data. Students will analyze data they have collected as well as that collected by others. CSU, UC (credit limits may apply to UC - see counselor)

**ASTRO-120 Elementary Astronomy**

- 3 units LR
- *IGETC: 5A; CSU GE: B1; DVC GE: II*
  - *54 hours lecture per term*
  - *Advisory: College-level reading and writing are expected. MATH-085 or MATH-085SP or beginning algebra or MATH-114 equivalents.*

This course presents an introduction to an elementary mathematical approach to the solving of problems relating to solar and stellar systems. Properties and evolution of stars and galaxies as well as their role in the evolution of the universe will be the major emphasis. Instrumentation used for and the analysis of electromagnetic radiation will also be discussed. CSU, UC (credit limits may apply to UC - see counselor)

**ASTRO-130 Astronomy Laboratory**

- 1 unit LR
- *IGETC: 5C; CSU GE: B3*
  - *54 hours laboratory per term*
  - *Prerequisite: ASTRO-110 or 120 or equivalent (may be taken concurrently)*

The laboratory course will involve the study of the fundamentals of astronomy and will include investigations of the sun, moon, planets, stars and galaxies. Telescopes and other instruments are used by students to gather data. Students will analyze data they have collected as well as that collected by others. CSU, UC

**ASTRO-298 Independent Study**

- .5-3 units SC
- *Variable hours*
  - *Note: Submission of acceptable educational contract to department and Instruction Office is required.*

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

**ASTRO-299 Student Instructional Assistant**

- .5-3 units SC
- *Variable hours*
  - *Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.*

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU

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