

ASTRONOMY (ASTR)

ASTR 5 Introduction to Astronomy

3 Units (Degree Applicable, CSU, UC)

Lecture: 54

Prerequisite: *Eligibility for ENGL 1A*

An introductory, non-technical survey of the universe. Fundamental concepts and facts of astronomy. Topics include the origin and evolution of planets, stars, and galaxies; results of space exploration and modern cosmology. Enroll in ASTR 5L to receive laboratory science credit. Field trips may be required.

ASTR 5H Introduction to Astronomy - Honors

3 Units (Degree Applicable, CSU, UC)

Lecture: 54

Prerequisite: *Eligibility for ENGL 1A; Acceptance into the Honors Program*

An honors course designed to provide an enriched experience. An introductory, non-technical survey of the universe. Fundamental concepts and facts of astronomy. Topics include the origin and evolution of planets, stars, and galaxies; results of space exploration and modern cosmology. Enroll in ASTR 5L to receive laboratory science credit. Field trips may be required. Students may not receive credit for both ASTR 5H and ASTR 5.

ASTR 5L Astronomical Observing Laboratory

1 Unit (Degree Applicable, CSU, UC)

Lab: 54

Corequisite: *ASTR 5 or ASTR 5H or ASTR 7 or ASTR 8 (May have been taken previously)*

Practical experience in astronomy including use of telescopes and demonstrations in the college planetarium. Field trip or evening instructor lead observing sessions with the telescopes are required.

ASTR 7 Geology of the Solar System

3 Units (Degree Applicable, CSU, UC)

Lecture: 54

Geological features and evolution in the solar system. Course surveys techniques used to study cratering, tectonic and volcanic activity, weathering, landsliding, erosion, and faulting. Emphasis on solid surfaces other than Earth. Enroll in ASTR 5L to receive lab science credit. Field trips required.

ASTR 8 Introduction to Stars, Galaxies, and the Universe

3 Units (Degree Applicable, CSU, UC)

Lecture: 54

Survey of current astronomical models, structure and evolution of stars, galaxies, and the universe. Field trip(s) required. Enroll in ASTR 5L to receive lab science credit.

ASTR 11 Introduction to Astrophysics

3 Units (Degree Applicable, CSU, UC)

Lecture: 54

Prerequisite: *PHYS 2AG*

Quantitative introduction to astrophysics. Topics include: Kepler's Laws, radiation, stars, stellar evolution, the Milky Way and other galaxies, cosmology, and extrasolar planets. Evening observations required.

ASTR 99 Special Projects in Astronomy

2 Units (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lab: 108

In order to offer students recognition for their academic interests and ability, and the opportunity to explore their disciplines to greater depth, the various departments from time to time offer Special Projects courses. The content of each course and the methods of study vary from semester to semester and depend on the particular project under consideration. Student must have instructor's authorization before enrolling in this class. Students who repeat this course will improve skills through further instruction and practice.

ASTR 99A Special Projects in Astronomy - Telescope Research

2 Units (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lab: 108

Prerequisite: *Instructor authorization required.*

This course is designed to give students an authentic research experience to help them make long term career decisions. Students will learn how to operate a telescope properly, take research quality data, process it using astronomy research software, write a professional research paper/poster and present their research. Students will also learn specialized concepts and skills that can help them transfer to an astronomy internship program. Students must regularly attend telescope lab until midnight. Instructor authorization required.

ASTR 99B Special Projects in Astronomy - Astrophotography

2 Units (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lab: 108

Advisory: *Instruction authorization required.*

Correctly setup and align a telescope as well as use of a DSLR camera to take pictures of the night sky. Techniques in camera settings, filters, stacking, and software processing to get the most of their images. This course includes several overnight field trips to dark sky areas where better images can be taken of the night sky. Instructor authorization required.

ASTR 99C Special Projects in Astronomy - Planetarium

2 Units (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lab: 108

Advisory: *Instructor authorization required*

Operate and present a planetarium show focusing on presentation planning, public speaking and presenting skills, and technical programming.

ASTR 99D Special Projects in Astronomy - Research

2 Units (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lab: 108

Advisory: *Instructor authorization required.*

Offers select students opportunities to explore astronomy in greater depth. The content of the course and the methods of study vary from semester to semester and depend on the particular project under consideration. This course is designed for students doing research outside of the college through an internship or other research program. Instructor authorization needed prior to enrollment.