

Area: Science and Engineering
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Astronomy is part of the general education program at American River College. The astronomy course offerings include Introduction to Astronomy, The Solar System, Stars/Galaxies/Cosmology, Introduction to Astrobiology, Honors Introduction to Astronomy, Independent Studies in Astronomy, and an Astronomy Laboratory. All courses comply with general education transfer requirements.

Astronomy

ASTR 300 Introduction to Astronomy 3 Units

Advisory: MATH 100, 104 or 132 with a grade of “C” or better, AND eligible for ENGRD 310 or ENGRD 312 AND ENGWR 300; OR ESLR 340 AND ESLW 340.

General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A Course Transferable to UC/CSU

Hours: 54 hours LEC

This course covers topics in modern planetary and stellar astronomy, such as dwarf, jovian, terrestrial, and extrasolar planets and the life cycle of stars, black holes, and supernovae. It also includes topics on cosmology and galactic astronomy, such as dark matter, dark energy, the Big Bang, and the expansion of the Universe.

ASTR 310 The Solar System 3 Units

Advisory: MATH 100, 104 or 132 with a grade of “C” or better, AND eligible for ENGRD 310 or ENGRD 312 AND ENGWR 300; OR ESLR 340 AND ESLW 340.

General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A Course Transferable to UC/CSU

Hours: 54 hours LEC

This course explores the nature and evolution of the solar system. Topics include the night-time sky, the history of astronomy, the tools of astronomy, and the origins and characteristics of planets, their satellites, and other components of the solar system. Emphasis is placed on how astronomers gain and refine their knowledge of the Universe and interpret the latest results of planetary exploration.

ASTR 320 Stars, Galaxies, and Cosmology 3 Units

Advisory: MATH 100, 104 or 132 with a grade of “C” or better, AND eligible for ENGRD 310 or ENGRD 312 AND ENGWR 300; OR ESLR 340 AND ESLW 340.

General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A Course Transferable to UC/CSU

Hours: 54 hours LEC

This course explores the nature and evolution of stars, galaxies, and the Universe. Topics include the history of astronomy, the tools of astronomy, star classification, stellar evolution, neutron stars, black holes, and the Big Bang. Emphasis is placed on how astronomers gain and refine their knowledge of the Universe and interpret the latest results of space exploration.

ASTR 330 Introduction to Astrobiology 3 Units

Advisory: MATH 100, 104 or 132 with a grade of “C” or better, AND eligible for ENGRD 310 or ENGRD 312 AND ENGWR 300; OR ESLR 340 AND ESLW 340.

General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A Course Transferable to UC/CSU

Hours: 54 hours LEC

This course explores the possibilities of life beyond Earth and what can we learn from terrestrial life forms surviving in extreme conditions. Topics include the origin, biology, and evolution of life on Earth, habitability and interior energy sources of Earth and other planets in the solar system, the likelihood of life existing on other planets or moons within our solar system, attempts to locate life within our solar system, and attempts to communicate with intelligent life in other parts of the galaxy.

ASTR 400 Astronomy Laboratory 1 Unit

Corequisite: ASTR 300, 310, 320, or 330

General Education: CSU Area B3; IGETC Area 5C

Course Transferable to UC/CSU

Hours: 54 hours LAB

This course covers the practical use of a telescope for visual observation of astronomical objects and the analysis of astronomical data. Topics may include constellation identification, stellar spectroscopy, solar and lunar observations, radio-physics and radio-astronomy, image analysis, measuring the properties of stars, and determining the age of the Universe. Night-time on-campus field trips are required.

ASTR 481 Honors Astronomy: Stars, Galaxies, and Cosmology 4 Units

Prerequisite: Placement into ENGWR 480 through the assessment process.

Advisory: MATH 100, 104, or 132 with a grade of “C” or better

General Education: AA/AS Area IV; CSU Area B1; CSU Area B3; IGETC Area 5A; IGETC Area 5C

Course Transferable to UC/CSU

Hours: 54 hours LEC; 54 hours LAB

This seminar-style course is an in-depth introduction to astronomy, focusing on stars, galaxies, and cosmology. It approaches current topics in astronomy through class discussion and laboratory activities, with an emphasis on critical thinking, problem-solving techniques, and conceptual reasoning.

ASTR 495 Independent Studies in Astronomy 1-3 Units

Prerequisite: None

Course Transferable to CSU

Hours: 54-162 hours LAB

Independent Study is an opportunity for the student to extend classroom experience in this subject, while working independently of a formal classroom situation. Independent study is an extension of work offered in a specific class in the college catalog. To be eligible for independent study, students must have completed the basic regular catalog course at American River College. They must also discuss the study with a professor in this subject and secure approval. Only one independent study for each catalog course will be allowed.