

Astronomy

Astronomy, the oldest of scientific studies, has played a vital role in the development of modern science. Astronomers study the formation, composition, and evolution of various objects, such as planets, stars, galaxies, nebulae, black holes, and the universe itself. Students take astronomy courses to prepare for a major in astronomy or to fulfill general education requirements. Career options include, but are not limited to, science journalist, museum or planetarium director, observatory technician, telescope operator, optics or electronics technician, computer programmer, mathematician, formal or informal educator, spacecraft or instrument engineer, mission data analyst, earth or space scientist, and astronomer/astrophysicist.

Academic and Career Pathway: Math and Sciences

Contact Information

Chair: Erika Peters (Physical Sciences)

Dean: Michael Fino
<https://www.miracosta.edu/academics/degree-and-certificate-programs/math-and-sciences/astronomy/index.html>

Department: Physical Sciences

Office: Building OC3600,
760.757.2121 x6924

Full-Time Faculty

Rica Sirbaugh French

Courses

ASTR 101: Descriptive Astronomy

Units: 3

Prerequisites: None

Acceptable for Credit: CSU, UC

Lecture 3 hours.

Course Typically Offered: Fall, Spring, and Summer

This introductory course surveys the entire universe while emphasizing the nature and process of physical science. Topics include the Earth-Sun-Moon system, Newton's laws and gravitation, historical astronomy, electromagnetic radiation, optics and telescopes, stars, galaxies, cosmology, and astrobiology. UC CREDIT LIMITATION: No credit if taken after ASTR 201.

ASTR 101L: Descriptive Astronomy Laboratory

Units: 1

Prerequisites: ASTR 101 or ASTR 201.

Enrollment Limitation: Concurrent enrollment in ASTR 101 or ASTR 201 if prerequisite not met.

Acceptable for Credit: CSU, UC

Laboratory 3 hours.

Course Typically Offered: Fall, Spring

This is a hands-on introduction to the methods and techniques of observational astronomy and data/error analysis. It emphasizes the collection, presentation, and interpretation of astronomical observations. Students learn to use a planisphere, read star charts, and operate small telescopes. Through indoor activities, computer simulations, and by making naked-eye, binocular, and telescopic observations, students explore such topics as seasons, lunar phases, rotation of the Earth, optics, light and spectroscopy, planets, stars, galaxies, and cosmology.

ASTR 120: Life in the Universe

Units: 3

Prerequisites: None

Acceptable for Credit: CSU, UC

Lecture 3 hours.

Course Typically Offered: Fall

This introductory course surveys the study for life in the universe from the Big Bang to implications of contact with an extraterrestrial civilization while emphasizing the nature and process of physical science. Topics include the formation and evolution of the universe; origin, evolution, and nature of life on Earth; the definitions of "life" and "habitability"; potential in our solar system and beyond; methods of interstellar communication and travel; implications of contact; science vs. pseudoscience; and the status of the search to-date.

ASTR 201: Introductory Astronomy

Units: 3

Prerequisites: MATH 64, MATH 64S, or eligibility determined by the math placement process.

Acceptable for Credit: CSU, UC

Lecture 3 hours.

Course Typically Offered: Spring even years

This introductory course surveys the entire universe with an emphasis on analytical, mathematical, and problem-solving skills. Topics include celestial mechanics, electromagnetic radiation and atomic physics, relativity, stellar structure and evolution, black holes, formation and evolution of planetary systems, galaxies, and cosmology. The course is directed toward students with a strong preparation and interest in science and mathematics.

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ASTR 292: Internship Studies

Units: 0.5-3

Prerequisites: None

Corequisite: Complete 75 hrs paid or 60 hrs non-paid work per unit.

Enrollment Limitation: Instructor, dept chair, and Career Center approval. May not enroll in any combination of cooperative work experience and/or internship studies concurrently.

Acceptable for Credit: CSU

Course Typically Offered: To be arranged

This course provides students the opportunity to apply the theories and techniques of their discipline in an internship position in a professional setting under the instruction of a faculty-mentor and site supervisor. It introduces students to aspects of the roles and responsibilities of professionals employed in the field of study. Topics include goal-setting, employability skills development, and examination of the world of work as it relates to the student's career plans. Students must develop new learning objectives and/or intern at a new site upon each repetition. Students may not earn more than 16 units in any combination of cooperative work experience (general or occupational) and/or internship studies during community college attendance.