

ASTRONOMY (ASTRO)

ASTRO 010 Introduction to Astronomy 3 Units

This is an introductory science course for non-science majors covering topics of modern Astronomy. It highlights pivotal aspects in the history of Astronomy such as its distinction and further separation from Astrology. It lists the physical processes governing the origins of a star system and indicates the causes of the apparent motion of sky objects and cyclic sky events. The sources of periodical astronomical events such as phases of the moon, solar and lunar eclipses, meteor showers, and seasons are identified and related via the fundamental laws of physics. The astronomical tools of photometry and spectroscopy are introduced for their indispensable role in analysis towards the detection of planets around other stars, the investigation of dark matter and dark energy, and the ongoing search for extraterrestrial life. Additional topics include the origins of galaxies, large scale structure, and a full description of the Big Bang theory.

Lecture Hours: 3 Lab Hours: None Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: 3
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1 IGETC: 5A District GE: B1

ASTRO 010L Introductory Astronomy Lab 1 Unit

This is an introductory laboratory course in Astronomy designed for non-science majors. It incorporates substantial number of contact hours at the Montgomery Hill Observatory, making use of the state of the art telescopes, CCD cameras, and various adapters for cell phones. Students will identify constellations and asterisms, measure the apparent motion of planets and stars, and investigate the geology of terrestrial objects throughout the solar system. A series of lab exercises will demonstrate main behaviors of light and its interaction with matter. This course will cover the different stages of stellar evolution, making use of computer simulations to illustrate changes in size and energy output of stars, as they age. Course work will conclude with explorations on large scale structures such as galaxies, clusters of galaxies, and the expanding Universe.

Lecture Hours: None Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: ASTRO 010 with C or better or concurrent enrollment
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B3 IGETC: 5C District GE: B3

ASTRO 014 Solar System Astronomy 3 Units

This is an introductory course focusing on the main physical processes governing the solar system formation and its evolution. It introduces the scientific methodology adopted by astronomers to establish self-consistent models of celestial processes. It highlights the latest achievements in space exploration on planets and their moons, and other minor bodies such as asteroids, comets, and dwarf planets. Special consideration is given to current research focusing on origins of life and the search for evidence of extraterrestrial life, past or present.

Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: 3
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

ASTRO 016 Stars, Galaxies, and the Origin of the Universe 3 Units

This is an introductory course for non-science majors highlighting the following subjects: stellar properties, stellar evolution, morphology of galaxies, and structure of the universe in large scale. It explains the main phases in stellar evolution, the stellar population in different sections of Milky Way Galaxy, the distribution of galaxies of different types within a cluster, and the observational support to the Hubble Law. Additional topics include a brief history of the Big Bang theory, the presence of dark matter in the galactic halo, and dark energy.

Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: 3
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

ASTRO 501 Reaching For the Stars I 0 Units

Reach For the Stars I is a non-credit laboratory course designed to introduce elements of Astronomy to groups of parents who have children in grades K - 2. Participants will learn the fundamentals of the night sky, including constellations, the moon's phases, the daily motion of the sky's objects, and more. Elements of the scientific method and mathematics are introduced in each module, making this course a viable option for parents interested in introducing STEM to their children.

Lecture Hours: None Lab Hours: 3 Repeatable: Yes Grading: N
Open Curriculum: No prerequisite, corequisite or levels
Transfer Status: None Degree Applicable: NC
CSU GE: None IGETC: None District GE: None

ASTRO 502 Reaching for the Stars II 0 Units

This is a non-credit laboratory course designed to introduce elements of astronomy to groups of parents who have children in grades 3 to 5. Participants will learn the fundamentals of the night sky, including constellations, the moon's phases, the daily motion of the sky's objects, the emptiness of space, and the universe on a large scale. In addition, elements of the scientific method and the use of mathematics operations will make this course a viable option for parents interested in partnering with their children in a shareable learning environment, while acquiring an appreciation for STEM.

Lecture Hours: None Lab Hours: 3 Repeatable: Yes Grading: N
Open Curriculum: No prerequisite, corequisite or levels
Transfer Status: None Degree Applicable: NC
CSU GE: None IGETC: None District GE: None