

ASTRONOMY (ASTR)

ASTR C100 **3 Units (54 lecture hours)**

Introduction to Astronomy

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU; UC.

Origin; characteristics; and evolution of the solar system, the stars, the galaxies, and the universe. Historical milestones in the science of astronomy from ancient astronomers to current topics such as dark energy, dark matter, and cosmology. Graded or Pass/No Pass option. UC Credit Limitations: no credit for ASTR C100L unless ASTR C100 is taken previously or concurrently.

ASTR C100L **1 Unit (54 lab hours)**

Astronomy Laboratory

Prerequisite(s): ASTR C100 with a grade of C or better or concurrent enrollment.

Advisory: Understanding of Beginning (Elementary) Algebra.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU; UC.

A beginning astronomy laboratory course for non-science majors. The course will include sky observations with real or virtual telescopes as well as indoor experiments that utilize astronomy-based simulations. Graded or Pass/No Pass option. UC Credit Limitations: no credit for ASTR C100L unless ASTR C100 is taken previously or concurrently.

ASTR C101 **3 Units (54 lecture hours)**

Planetary Astronomy

Advisory: ASTR C100.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU; UC.

An introduction to the solar system and all its constituents (sun, planets, dwarf planets, moons, asteroids, comets, etc.), their origin and nature, and their development since the time of the creation of the solar system approximately 4.6 billion years ago. Current topics of interplanetary missions, other planetary systems, and development of life in our and in other planetary systems will be discussed. Graded or Pass/No Pass option.

ASTR C102 **3 Units (54 lecture hours)**

Stellar Astronomy

Advisory: ASTR C100.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU; UC.

A detailed study of the formation, structure, and evolution of the sun and stars, including an overview of binary systems, variable stars, Supernovae Types I & II, white dwarfs, neutron stars, black holes, and other stellar phenomena. A survey of particle physics and special and general relativity will also be included. Graded or Pass/No Pass option.

ASTR C103 **3 Units (54 lecture hours)**

Cosmology

Prerequisite(s): ASTR C100 or ASTR C102 with a grade of C or better.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU; UC.

An introduction to the origin and evolution of the universe with emphasis on the major cosmological models. Galaxy types, galaxy evolution, clustering, gravitational lensing, non-luminous (dark) matter, and the cosmological constant (dark energy) will be studied. An overview of relevant particle physics and special and general relativity will be included. Graded or Pass/No Pass option.

ASTR C104 **3 Units (54 lecture hours)**

Tools of Astronomy

Advisory: ASTR C100.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

A coherent state-of-the-art account of the instruments and techniques used in astronomy and astrophysics today. This includes telescopes and their instrumentation as applicable to different wavelength ranges in the electromagnetic spectrum as well as other 'windows' like e.g. cosmic ray or neutrino detectors and gravitational wave detectors. Field trips to major astronomical observatories are included. Graded or Pass/No Pass option.