



AST 105 Classical and Modern Astronomy (PHYS 1311)

Course Description

General Bulletin Description Introductory study of planetary astronomy, astrophysics, and cosmology. Computation of lecture and laboratory grades into one grade; same grade recorded for both lecture and laboratory.

This is a survey course that stresses the historical and descriptive aspects of our knowledge of astronomy. The major aims are to give each student an appreciation and understanding of the size, scale, and structure of the cosmos, to gain an understanding of the nature of science and astronomy, to see that the universe is comprehensible through the scientific principles that can be understood by everyone, and to gain an increased interest in studying current events in astronomy as a life-long learning activity. The methods of science will be strongly emphasized.

Number of Credit Hours 3 for lecture, 1 for lab

Course Corequisite

Classical and Modern Astronomy Laboratory (AST 105L)

Specific Course Requirements

Textbook Requirements

See current semester textbook list at <http://www.physics.sfasu.edu/docs/books.pdf>

Program Learning Outcomes

- The student will demonstrate proficiency in the basic and applied fields of physics.

General Education Core Curriculum Objectives/Outcomes

- To understand and apply method and appropriate technology to the study of physical science
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry, and to communicate findings, analyses, and interpretation both orally and in writing
- To identify and recognize the differences among competing scientific theories
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture

Student Learning Outcomes

By the end of the course, a successful student will be able to:

- Recognize that the universe can be described by a few natural laws.
- Describe the characteristics of objects within the solar system including the sun, planets, moons, asteroids, and comets.
- Demonstrate a basic familiarity with stellar life cycles, galaxies, and extragalactic objects.

Outline of Topics

- [Where We Have Been](#) (25%) – an overview of the progress in understanding the universe in the past 3000 years.
- [Of Light and Stars](#) (25%) – the properties of light used as the major investigative tool in astronomy, as well as fundamental stellar properties.
- [Stars and Galaxies](#) (25%) – a close-up look at the Sun, the details of stellar evolutionary theory, the Milky Way, galaxies, QSO's, and cosmology.
- [The Solar System](#) (25%) – the solar system.

Laboratory

The AST 105 laboratory and lecture are fully integrated and share the same learning outcomes and course objectives.