

AST 152 A General Astronomy II Lab

COURSE DESCRIPTION:

Prerequisites: AST 151/151A

Corequisites: AST 152

This course is a continuation of AST 151 with primary emphasis beyond the solar system. Laboratory experiences will illuminate the physics and astronomical concepts of AST152 and provide hands-on experience with observing instruments. Topics include the sun, stars, galaxies, and the larger universe, including cosmology. Upon completion, students should be able to demonstrate a working knowledge of astronomy. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.* Course Hours Per Week: Class, 0; Lab, 2 Semester Hours
Credit: 1

LEARNING OUTCOMES:

Upon completion of this course, the student will be able to:

1. Demonstrate conceptual understanding of fundamental physical principles and measurement techniques used in modern astronomy.
2. Demonstrate conceptual understanding of astronomical objects and phenomena.
3. Understand various objects within the Milky Way Galaxy and Universe.
4. Understand the size, scale, and structure of the Universe.
5. Be able to observe the sky and gain an understanding of the objects and motions visible.

OUTLINE OF INSTRUCTION:

- I. Use the magnitude system to estimate stellar brightness
- II. Calculate the distance to a star given its heliocentric parallax
- III. Draw a Hertzsprung-Russell diagram and explain its axes
- IV. Identify the stellar classification scheme and corresponding colors and temperatures
- V. Define stellar proper motion and describe how distances are determined using it
- VI. Explain the difference between true and visual binaries and describe the uses of eclipsing binaries and Cepheid variables
- VII. Describe the types of novae/supernovae
- VIII. Compare and contrast galactic and globular clusters and stellar associations
- IX. Describe the universe on the large scale
- X. Explain evidence for our present theory for the formation of the universe
- XI. Have a brief discussion about the possibility of life elsewhere in our galaxy.

REQUIRED TEXTBOOKS AND MATERIALS:

To be selected by Instructor/Discipline Chair.