AST 151 General Astronomy I

COURSE DESCRIPTION:

Prerequisites: DRE-097 **OR** ENG-002
AND
DMA-010, DMA-020, and DMA-030 **OR** MAT 003, or satisfactory score on placement test.
Corequisites: AST 151A

This course introduces the science of modern astronomy with a concentration on the solar system. Emphasis is placed on the history and physics of astronomy and an introduction to the solar system, including the planets, comets, and meteors. Upon completion, students should be able to demonstrate a general understanding of the solar system. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.* Course Hours Per Week: Class, 3; Lab 0, Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon completing requirements for 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 Solar System.
4. Understand the size, scale, and structure of the Solar System.
5. Be able to observe the sky and gain an understanding of the objects and motions visible.

OUTLINE OF INSTRUCTION:

I. Introduction
   A. Distance Measurement
   B. Scientific Theory and Scientific Method
   C. Earth's Motion
   D. Lunar Motion

II. History of Astronomy
   A. Copernican Revolution
   B. Laws of Planetary Motion
   C. Newton's Laws

III. Light and Matter
   A. Electromagnetic Spectrum
   B. Spectroscopy
   C. Thermal Radiation

D. Doppler Effect
E. Spectral-Line Analysis

IV. Telescopes
A. Optical Telescopes
B. Radio Telescopes

V. The Solar System
A. Formation of the Solar System
B. The Sun (Sol)
C. Earth and Luna
D. Terrestrial Planets and Their Moons
E. Jovian Planets and Their Moons
F. Pluto, Asteroids, and Other Solar System Bodies

REQUIRED TEXTBOOKS AND MATERIALS:
To be selected by Instructor/Discipline Chair.