

GLY 4045

Moons, Planets, and Meteors: An Introduction to Planetary Science

Course Description: An upper level course that explores both modern and historical views on the origins of meteorites, the moon, the planets, and other bodies of the solar system. The importance of space science as a tool in the study of earth science and the importance of earth science as a tool in the exploration of the universe is discussed.

This course is designed for upper level students pursuing a BS in Science Education.

3 Credits

Pre-requisites: GLY 1010, GLY 1100

Course competencies

Competency 1: Students will demonstrate understanding of the fundamentals of Planetary Astronomy by:

- a. Describing electromagnetic radiation
- b. Applying Newton's and Kepler's Laws
- c. Describing the Big bang theory and subsequent formation of galaxies and stars
- d. Discussing the history of human exploration of the solar system

Competency 2: Students will demonstrate an understanding of the origin of the Solar System by:

- a. Describing the formation of the Solar System in terms of currently accepted theories

Competency 3: Students will explain the dynamics of planetary orbits by:

- a. Diagramming both the 2 body and 3 body problems
- b. Discussing planetary perturbations and long-term stability of planetary orbits

Competency 4: Students will summarize the effect of solar heat and energy in planetary atmospheres by:

- a. Discussing energy balance and transport
- b. Compare and contrast planetary atmospheres

Competency 5: The students will model the internal and external structure of both Terrestrial and Jovian planets by:

- a. Interpreting geophysical planetary data of the different types of planets
- b. Discussing the formation of planetary rings

Competency 6: The student will distinguish between meteorites, asteroids, and comets by:

- a. Analyzing composition and structure of the three types of bodies
- b. Analyzing origin and source of these bodies

Competency 7: Students will summarize the search for extrasolar planets by:

- a. Comparing different methods used to detect and or observe extrasolar planets

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