

## **Astronomy 101 – Introduction to the Solar System (4)** **Course Outline** **GE B3**

**Prerequisites for ASTR 101** – None. Not open to students who have completed or are taking ASTR 301, ASTR 302, or PHYS 132. 4 lectures. Fulfills GE B3.

Astronomy 101 begins with a historical introduction to the great discoveries of the past and indicates how these discoveries have influenced mankind's awareness of Earth's true nature. Students will learn how theoretical research with observations have led to our present understanding of astronomical bodies. While continuing their education, students can use the knowledge gained in Astronomy 101 to allow them to put in perspective mankind's place in the universe.

### **Learning Objectives and Criteria:**

Students are expected to acquire the following knowledge about the Solar System:

- a. Properties and characteristics of objects in the Solar System
- b. Interactions between members of the Solar System
- c. Theories of the origin and evolution of the Solar System
- d. Earth's place as a planet
- e. Search for other planetary systems
- f. Historical context of astronomical discoveries
- g. Understanding and using the laws of physics to interpret astronomical observations

### **Text and References:**

“**Cosmic Perspective, The Solar System**”, by Bennett & Donahue, Addison Wesslley, 5<sup>th</sup> Ed. paperbk.  
“Universe” by Freedman & Kaufmann, Freeman, 8<sup>th</sup> Ed.

### **Content and Method:**

**Content: ASTR 101 will adhere to the following topics:**

- Week 1: Naked eye astronomy
- Week 2: Historical observations and discoveries
- Week 3: The nature of light
- Week 4: Optics and telescopes
- Week 5: Overview of the solar system
- Week 6: Formation of the solar system
- Week 7: Earth and Moon
- Week 8: Terrestriai planets
- Week 9: Jovian planets
- Week 10: Minor bodies of the solar system

**Method:**

ASTR 101 is a 4-unit lecture course. An observing experience is provided in addition to the lecture through the Physics Department Observatory, which is operated by student assistants. ASTR 101 is taught as a lecture course with an enrollment of 50 to 60 students.

**Methods of Assessment:**

Typical assessments are done by 2 or 3 examinations during the quarter, by assigned homework, by possible assigned writing projects on individually selected topics, and by a comprehensive final examination.

Faculty with advanced degrees in the topic will examine student efforts on tests and on other required work and then assign appropriate grades. It is estimated that the writing component will be a minimum of 500 words and comprise at least 10% of the course grade.