

# Astronomy (ASTR)

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## COURSES

### **ASTR 1345. INTRODUCTORY ASTRONOMY I. 3 Hours.**

ASTR 1345 and ASTR 1346 constitute a one-year sequence for any student who is interested in learning his/her place within the astronomical universe. The first semester consists of an essentially descriptive treatment of the apparent motions and properties of members of the Solar System including the Sun, the planets and their moons, comets and rockets, and satellites as well as the mechanics and evolution of the Solar System. The laboratory work includes the use of astronomical telescopes for observation.

### **ASTR 1346. INTRODUCTORY ASTRONOMY II. 3 Hours.**

Follows ASTR 1345 and focuses on the science of stars and galaxies. Properties of light are applied to the understanding and classification of stars and to determining their distances. Topics include nuclear reactions, binary stars, variable stars, exploding stars, black holes, and star clusters. The course concludes with the structure of the Milky Way and the role galaxies play in modern cosmological theories. The laboratory work includes telescopic observations.

### **ASTR 2345. ARCHAEOASTRONOMY. 3 Hours.**

This is a one semester course on astronomy and archaeology intertwining with an emphasis on the interesting relationship between ancient constructions and the sky. It provides a better understanding of the ideas of the architects of the past and of their religious and symbolic worlds. Many examples show how ancient astronomy still related to current astronomy in so many ways and events, such as the total lunar eclipse that led to the Athenian defeat at Syracuse, or the relation of the Easter/Passover/Chinese New Year to lunar cycles, or Polynesian sailors who populated the Pacific with the stars as a guide. This course is divided into three sections, the first of which explores the past relations between astronomy and people, power, the afterworld, architecture, and landscape. Secondly, the fundamentals of archaeoastronomy are then addressed in detail, with coverage of the celestial coordinates; the apparent motion of the Sun, Moon, stars, and planets; observation of celestial bodies at the horizon; the use of astronomical software in archaeoastronomy; and current methods for making and analyzing measurements. The final section reviews what archaeoastronomy can now tell us about the nature and purpose of such sites and structures as Stonehenge, the Pyramids of Giza, Chichen Itza, the Campus Martius, and the Valley of the Temples of Agrigento. Prerequisite: high school math.