# PHYSICS 1301

# FUNDAMENTALS OF ASTRONOMY (3-0)

**COURSE DESCRIPTION**

This course is a three hour introduction to stellar astronomy. A separate laboratory course can be taken. The sequence of astronomy courses (PHYS 1301 and PHYS 1302) plus labs (PHYS 1101 and PHYS1102) satisfy the eight hour physical science with lab requirement for most degree programs. This course can be used for elective credits in most degree programs. PHYS 1301, Fundamentals of Astronomy, is an introduction to astronomy covering night sky observations, the techniques and methods of modern astronomy, and basic concepts related to the sun, stars, our galaxy, other galaxies, the large scale structure of the universe, and cosmology, the study of the origin and evolution of the universe. This is an eight-week, online course that begins on August 26 and ends on October 21, 2013.

# STUDENT LEARNING OUTCOMES

There are two general goals for Physics 1301.

1. After completing this course you should comprehend the most important scientific models governing modern astrophysics and be familiar with the astronomical objects studied by astronomers.
2. After completing this course you should comprehend the practices and methodologies used by

modern astronomers in constructing astrophysical models.

The term “comprehend” means the intellectual ability to translate, interpret, and extrapolate the concepts of modern astrophysics. These three skills transcend the mere ability to recall facts and figures. Many of the questions on the homework and exams will evaluate your ability to comprehend the topics covered in class lectures and the textbook.

This course is part of the ASU core. The learning outcomes, assignments/general activities, and assessments are identified below.

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| **Course Level Learning Outcomes** | **Proposed 2014 Core Assignments/General**  **Learning Activities for the Core Objectives** | **Proposed 2014 Core Assessments** |
| **PHYS 1301**  **CT1:** Students will be able to state a question, gather information, collect and analyze data, identify assumptions, develop a hypothesis, and critically evaluate results to arrive at an answer to a question.  **CS3:** Students will be able to represent, organize, format, and display data and information visually.  **EQS1:** Students will be able to present data numerically, perform mathematical calculations, and quantitatively analyze data to draw plausible conclusions.  **EQS2:** Students will be able to state a question, gather relevant factual information, analyze these facts, identify assumptions, and evaluate the results to arrive at an answer to a question.  **TW2:** Students will be able to engage team members, support a constructive team climate, and keep the team focused on the task at hand. | **PHYS 1301**  **CT1:** Activities, minilabs, field trips in which students apply the scientific method in an experiment and draw conclusions  **CS3:** Graphing of data collected during minilabs or field trips, sketching of equipment, circuits, systems, structures, patterns  **EQS1:** Numerical presentation and analysis of data  **EQS2:** Analysis of scientific facts and natural systems  **TW2:** Hands-on activities, minilabs, fieldtrips in which students work together in groups to complete the experiment | **PHYS 1301**  **CT 1 & CS 3:** Post-test questions or rubric evaluated components of activities/minilabs  **EQS1:** Post-test questions or rubric evaluated components of activities/minilabs requiring numerical calculations  **EQS2:** Post-test questions or rubric evaluated components focusing on scientific facts or analyzable natural systems  **TW2:** Activity/minilab average, peer evaluations, or rubric evaluated components of activities/minilabs |

# Accommodations

Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, room 112 University Center in order to request and to implement academic accommodations.

# Honor Code

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the student handbook.