

ASTM101
Astronomy
3 Credits

Community College of Baltimore County
Common Course Outline

Description

ASTM101 – Astronomy: is a course in which students examine observations and theories regarding the place of Earth in the Universe. Students will investigate other planets, stars from their formation in nebulae to their deaths as stellar remnants, galaxies, and the expanding universe. ASTM102, Astronomy Laboratory, serves as the accompanying lab.

Pre-requisites: ACLT 053 or (ESOL 052 and ESOL 054) and MATH 082

Overall Course Objectives

Upon completion of this course, students will be able to:

1. describe the features and natures of astronomical objects using appropriate astronomical terminology;
2. present astronomical information using effective written communication;
3. manipulate data numerically and graphically;
4. interpret astronomical data using mathematical and graphical methods;
5. employ astronomical data and scientific methods, individually and collaboratively, to solve problems involving astronomical topics;
6. use observational instrumentation and/or computational equipment to research an astronomical topic;
7. explain how results from various observational technologies are used to develop theoretical models of celestial objects;
8. find, evaluate, use, and cite academically appropriate resources used to research astronomical topics;
9. discuss how processes within the solar system affect the conditions for biological and social organization on Earth;
10. examine the astronomical contributions made by people from diverse cultures over the course of prehistory and history;
11. discuss the place of human life within the physical extent of the universe and within the sequence of cosmological processes;
12. distinguish between principles related to astronomy that are evidence-based versus non-evidence based; and
13. evaluate professional behavior within the scientific community including the ramifications of misconduct.

Major Topics

- I. Developments in Astronomy
 - a. Scientific Revolution

The Common Course Outline (CCO) determines the essential nature of each course.
For more information, see your professor's syllabus.

- b. Modern Technology
 - c. Current Global Topics
- II. Properties of Light
- III. Solar System
 - a. Sun
 - b. Earth's Development and Structure
 - c. Planets and Moons
 - d. Asteroids and Comets
 - e. Exoplanets
- IV. Stars
 - a. Formation
 - b. Types
 - c. Evolution
- V. Galaxies
 - a. Milky Way
 - b. Structure
 - c. Classification
- VI. Universe
 - a. Origin
 - b. Evolution

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- four exams, one of which may be the final exam
- five homework assignments or collaborative activities
- a writing assignment such as the Common Graded Assignment that is worth 10% of the course grade

Attendance will be taken each class period as per college policy, but no points will be rewarded solely for attendance. However, assignments may be given that can only be completed within a certain class period.

The total extra credit given in this course can increase a student's percentage grade by no more than two percentage points.

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

Other Course Information

This course is an approved 3–credit General Education course in the Biological and Physical Sciences but does not fulfill the laboratory requirement.

One or more assignments will infuse CCBC General Education Program outcomes and will account for a minimum of 10% of the total course grade. The assignment(s) will allow students to demonstrate at least 5 of the 7 General Education program outcomes.

Date Revised: 12/6/2022

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