

# Common Course Outline

ASTM101

Astronomy

3 Credits

## Community College of Baltimore County

### Description

**ASTM101 – 3 credits – Astronomy** presents observations and theories regarding the place of Earth in the universe. Students investigate other planets, stars from their formation in nebulae to their deaths as white dwarfs, neutron stars or black holes, galaxies and the expanding universe. For students needing a lab, ASTM102 Astronomy Laboratory serves as the accompanying lab.

### **3 Credits**

**Prerequisites:** ACLT 052 or ACLT 053; and MATH 082

### Overall Course Objectives

Upon completion of this course students will be able to:

1. choose appropriate astronomical terms to describe the features and natures of astronomical objects;
2. manipulate and present data numerically and graphically;
3. present astronomical information using effective written and/or oral communications;
4. interpret astronomical data using mathematical methods;
5. use 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 document informational resources to research astronomical topics;
9. discuss how processes within the solar system affect the conditions for biological and social organization on Earth;
10. compare and contrast 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 and explain the ramifications of misconduct.

## **Major Topics**

- I. Developments in Astronomy
  - A. Classical Astronomy
  - B. Scientific Revolution
  - C. Modern Technology
  - D. Current Global Topics
- II. Solar System
  - A. Sun
  - B. Planets and Moons
  - C. Asteroids and Comets
- III. Stars
  - A. Formation
  - B. Types
  - C. Evolution
- IV. Galaxies
  - A. Milky Way
  - B. Types
  - C. Evolution
- V. Universe
  - A. Origin
  - B. Evolution

## **Course Requirements**

Grading procedures will be determined by the individual faculty member but will include the following:

### **Grading/exams:**

- A minimum of 4 exams one of which may be the final exam
- A minimum of 5 homework assignments and/or activities; activities may be collaborative
- 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.
- Multiple assessments will infuse CCBC General Education program objectives.

### **Written Assignments:**

- At least one assignment worth a minimum of 10% of the total course grade will allow students to demonstrate at least 5 of the 7 General Education Program outcomes. Students are required to utilize appropriate academic resources.

## **Other Course Information**

This course is an approved 3-credit General Education course in the Biological and Physical Sciences category that **by itself does not fulfill** the laboratory requirement. Successful completion of this course and the companion laboratory, ASTM 102, fulfills the laboratory

requirement and equals 4 credits. Please refer to the current CCBC Catalog for General Education course criteria and outcomes.

Date revised: 05/30/2019