

JEFFERSON COLLEGE

COURSE SYLLABUS

PHY 106

INTRODUCTION TO ASTRONOMY

4 Credit Hours

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Revised By:
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April 2016

Minor Revision or Update by: Fran Moore
Per Curriculum Committee Process Change: April 25, 2018

Ms. Constance Kuchar, Interim Division Chair, Math & Science
Ms. Shirley Davenport, Dean, Arts & Science Education

PHY106 Introduction to Astronomy

I. CATALOG DESCRIPTION

- A. Prerequisites: Reading proficiency
- B. 4 semester hours credit
- C. Introduction to Astronomy is a General Education course which is designed to acquaint students with the structure of our solar system and the universe. Laboratory time is required. Two four-hour observation nights are included as part of the lab. (S)
- D. Curricular alignment:
 - Fulfills part of Natural Sciences (Physical Sciences) with lab CORE requirement for AA, AAT, AFA, and select AAS degrees: MOTR ASTR 100L Astronomy with Lab.
 - Elective course applies toward AA or AAT degree.

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

Expected Learning Outcomes	Assessment Measures
Describe the motions of celestial bodies as viewed from earth	Exams, pop quizzes, and lab reports
Identify and locate 10 major constellations	Exams and lab reports
Use a telescope	Exams and lab reports
Describe the basic structure of our solar system and its components	Exams, assignments, and pop quizzes

III. OUTLINE OF TOPICS

- A. Earth based observations
 1. Explain the geocentric solar system and the changes introduced by the heliocentric solar system
 2. Explain how gravity affects the motion of celestial bodies
 3. Describe the nature of light and its relationship to atomic structure
 4. Explain the general properties of various telescopes and their use as observational tools
- B. Stars
 1. Explain the structure of our sun as a star
 2. Explain the various methods of measuring the properties of distant stars
 3. Describe the theories of the formation and evolution of stars
 4. Describe the results of supernovae

- C. Cosmology
 - 1. Describe the structure and components of our galaxy, the Milky Way
 - 2. Describe methods of measuring the properties of distant galaxies
 - 3. Describe the various types of galaxies thus far discovered
 - 4. Explain current theories concerning galaxies and the formation of the universe

- C. Our solar system
 - 1. Describe the general structure of our solar system
 - 2. Describe the properties of the terrestrial planets
 - 3. Describe the properties of the outer planets
 - 4. Describe the properties of the dwarf planets
 - 5. Describe the differences between meteors, asteroids, and comets
 - 6. Describe the properties of other solar bodies
 - 7. Explain current theories on the formation of our solar system

IV. METHODS OF INSTRUCTION

- A. Lecture
- B. Video
- C. Classroom discussions
- D. Demonstrations
- E. Laboratories

V. REQUIRED TEXTBOOK

Chaisson & McMillan; *Astronomy: The Universe at a Glance* (current edition). Boston: Pearson.

VI. REQUIRED MATERIALS

Lab manual (Jefferson College bookstore)

VII. SUPPLEMENTAL REFERENCES

No supplemental references required

VIII. METHODS OF EVALUATION

- A. Exams
- B. Assignments / pop-quizzes
- C. Laboratories
- D. Final

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (TC 101; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College website, <http://www.jeffco.edu>).

XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.

XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.