JEFFERSON COLLEGE

COURSE SYLLABUS

PHY106

INTRODUCTION TO ASTRONOMY

4 Credit Hours

Prepared by: Tom Schuessler

Revised Date: January 2009
by
Tom Schuessler

Arts & Science Education
Dr. Mindy Selsor, Dean
PHY106: Introduction to Astronomy

I. CATALOGUE DESCRIPTION

A. Course Pre-requisites / Co-requisites: None

B. 4 semester credit hours

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. Three lectures and one two-hour lab per week. Two four-hour observation nights are included as part of the lab. This course fulfills part of the Core science requirement for the Associate of Arts degree (F).

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

| Students shall be able to understand the motions of celestial bodies as viewed from the earth | Exams, pop-quizzes, and lab reports |
| Students shall be able to identify and locate 10 major constellations | Exams and lab reports |
| Students shall be able to use a telescope | Lab reports and exams |
| Students shall be able to understand the basic structure of our solar system and its components | Exams, assignments, and pop-quizzes |
| Students shall be able to understand the basic structure of the universe and its components | Exams, pop-quizzes, or assignments |

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 the current theories concerning the galaxies and the formation of the universe

D. 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. Discussion
D. Demonstration
E. Laboratory

V. REQUIRED TEXTBOOK

*Explorations* by Thomas T Arny, Starry Night Pro CD, McGraw- Hill Company (most recent edition)

VI. REQUIRED MATERIALS

No materials required

VII. SUPPLEMENTAL REFERENCES

No supplemental references required
VIII. METHODS OF EVALUATION

A. Exams 40%
B. Assignments/ Pop-quizzes 10%
C. Laboratory 20%
D. Term Project 10%
E. Final 20%
F. Random pop-quizzes may be utilized to determine students’ understanding of current material.
G. Exams and labs may be used to evaluate the students’ overall understanding of each section.
H. Should there be a problem with comprehension of a given area, review and retesting may be done.

IX. ADA-AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library; phone 636-797-300, ext. 169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College Website).

XI. ATTENDANCE STATEMENT

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.