COURSE DESCRIPTION

Dept., Number	Astr 104	Course Title	Astronomy II
Semester hours	3	Course Coordinator	Don Summers, Professor

Current Catalog Description

Lectures, demonstrations in astronomy, laboratory experiences in celestial mechanics and light, and observations through an optical telescope in an integrated lecture laboratory sequence.

Textbook

J. Bennett et al: *The Cosmic Perspective*, 4th edition, Addison-Wesley, 2005.

References

Voyager SkyGazer Planetarium software associated with the textbook.

Course Outcomes

Upon successful completion of this course, the students:

1. know how stars, galaxies, and other wonders of the Universe work,
2. know how astronomers made these discoveries,
3. have carried out some of the actual experiments

Relationship between Course Outcomes and Program Outcomes

The ABET/CAC criteria for computer science require 30 credit hours of science and mathematics appropriate for the discipline. The BSCS program meets this criterion by requiring 14 hours of natural science courses intended for majors in those fields, including a two-course sequence with associated laboratories in one field, and 18 hours of mathematics beyond the pre-calculus level. This course is one option for satisfying part of the science requirement. The course outcomes are related to the expectations for the role of natural science in the BSCS curriculum.

Prerequisites by Topic

No prerequisites

Major Topics Covered in the Course

1. Introduction to the sky
2. The Solar System and scales in astronomy
3. Constitution of matter and forms of energy
4. Motion: Kepler's laws and Newton's Laws
5. Properties of light and radiation
6. Telescopes
7. The Sun
8. Stars: main properties
9. Stars: HR diagram, star clusters
10. Stars: star formation and evolution
11. White dwarfs and neutron stars
12. Black holes; Einstein's view of gravity; Gamma ray bursts
13. The Milky Way
14. Galaxies
15. Galaxy evolution
16. Dark energy
17. Cosmology: Big Bang, universe evolution
18. Cosmology: Problems and possibilities
19. Interstellar travel

Assessment Plan for the Course

The instructor assesses the student performance related to the course outcomes using examinations, quizzes, and laboratory exercises.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

The conduct of this course is not governed by the ABET program faculty. No data are collected that are used to assess program outcomes directly.

Estimate Curriculum Category Content (Semester hours)

Science 3 hours