WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

*Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.*

CATALOG DESCRIPTION

Introduction to the astronomical universe for non-science students.

STUDENT LEARNING OUTCOMES

**Course Goals:** Upon successful completion of Astronomy, the student will be able to:

- Relate how the changing perception of science has led us to our current understanding of the physical universe and our place within it.
- Explain how scientists use both qualitative and quantitative analysis methods to investigate how the universe works.
- Understand the basic laws of physics, which govern the movement, and workings of the planets, stars, and larger structure of the universe.
- Explain the nature, characteristics, and distribution of various forms of matter in the physical universe.
- Define the theories of the origin and evolution of the planets, stars, galaxies, and the universe itself.
- List the current theories of the origin of life in the physical universe.
COURSE CONTENT

Astronomy is an introductory course in a physical science pertaining to the study of everything above and beyond the Earth’s atmosphere. The basic concepts of physics and chemistry will be covered while trying to build a basic understanding of the various forms of matter within our Universe. The study of planets, stars, exotic remnants, galactic structure, life, and cosmological outcomes are among the many topics that will be covered.

ASSESSMENT TASKS AND GRADING

The total accumulated points a student has acquired throughout the semester will determine the final grade. The point break down for the semester is; 3 midterms (20% each), and a cumulative final at 40%. If the overall percentage is between 100 and 90, the student will receive an A. If the overall percentage is between 89 and 80, the student will receive a B. If the overall percentage is between 79 and 70, the student will receive a C. If the overall percentage is between 69 and 60, the student will receive a D. If the overall percentage is less then 60, the student will not receive a passing grade.

NOTE: In cases of dire emergency (documentation must be provided), a missed exam can be made-up. It is recommended (and obviously, not always possible) that the make-up exam be scheduled before the exam that will be missed. The make-up exam must be taken before the general results have been made public and passed back to the class.

LEARNING RESOURCES

Textbook:  The Essential Cosmic Perspective
J. Bennet, M. Donahue, N. Schnieder, & M. Voit, Addison Wesley

Optional Additional Texts:  Astronomy; A Beginners Guide to the Universe
E. Chaisson & S. McMillian, Prentice Hall

Astronomy: From the Earth to the Universe (5th Ed.)
J. M. Pasachoff, Saunders College Publishing

Astronomy Today (4th Ed.)
E. Chaisson & S. McMillian, Prentice Hall

Materials Auxiliary: A simple calculator (non QWERTY type) is useful. For ESL students, a language exchange text may be used during exams, but not electronic translators will be allowed.
Additional Information

Outline of Topics: (very tentative)

1. Celestial Astronomy
2. History of Astronomy
3. Light and Matter
4. Tools of Astronomy

Exam I (Thurs. 9/23)
5. Comparative Planetology
6. The Earth-Moon System
7. The Terrestrial Planets
8. The Jovian Planets
9. The Origin of the Solar System

Exam II (Thurs. 10/21)
10. The Sun
11. The Stars
12. The Dusty ISM
13. Stellar Evolution
14. Stellar Explosions
15. Exotic Objects

Exam III (Tues. 11/18)
16. The Milky Way
17. Normal and Active Galaxies
18. The Big BANG?
19. Are We Alone?

Final

DISABILITIES ACCOMMODATION STATEMENT

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.