

North Central Michigan College

NCMC MASTER COURSE SYLLABUS FOR YEARS 2001-2003

DIVISION/AREA: Sciences, Health and Human Services DEPARTMENT: Science

DIVISION DIRECTOR: Polly Flippo, MSN,RN ORIGINATOR: Brian Peterson

DEAN OF INSTRUCTION: Timothy Dykstra, PhD

TOTAL HOURS OF INSTRUCTION: LECTURE:3 LAB: 2 TOTAL CONTACT HOURS: 88

COURSE NUMBER: PHYS 107 CREDIT HOURS: 4(3-2)

COURSE TITLE: Intro to Astronomy

TRANSFERABLE YES: NO: TO: Most

PREREQUISITE(S)/COREQUISITE(S)/ADVISORY:

MTH 111 or equivalent

CATALOG DESCRIPTION:

A broad, descriptive study of modern astronomy, with emphasis on underlying physical principles. Topics include historical astronomy, the solar system, the stars, stellar evolution, the galaxies, and cosmology. The course includes an evening laboratory session and outdoor observing activities.

GENERAL EDUCATION OUTCOMES:

The purpose of General Education requirements in our degree programs is to enable students to develop their ability to reason, to communicate effectively in both oral and written form, and to acquire sufficient knowledge of their heritage to participate fully in society and the world.

COURSE OBJECTIVES & OUTCOMES:

Upon successfully completing this course, you should be able to: (1) interpret astronomical observations in terms of physical concepts and principles to arrive at a scientific model of the universe, (2) apply the basic concepts and principles of astronomy to your area of academic interest, (3) apply careful observation, critical thinking and problem-solving skills to the interpretation of astronomical data, and (4) effectively use selected laboratory instruments and techniques to collect, analyze, and interpret astronomical data

METHODS OF INSTRUCTION:

Lecture, lab, discussion, sky explorations.

METHODS OF EVALUATION:

Exams, quizzes, lab reports.

REQUIRED TEXTS:

Astronomy: A Beginner's Guide to the Universe, 3rd ed., by Chaisson and McMillan

Discovering Astronomy, 4th ed., by Shawl, Robbins, and Jefferys

Reasonable accommodations may be provided for students with documented physical, sensory, cognitive, systemic, and/or psychiatric disabilities. Please contact the Education Opportunity Program (EOP) at (231) 348-6687 to arrange services for this course.

TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION:

This course is scheduled to include the following general topics:

A. Astronomy and the Universe

1. Charting the Heavens (Prologue)
2. The Heliocentric Universe (Ch. 1)
3. Light and Matter (Ch. 2)
4. Telescopes (Ch. 3)

B. Our Planetary System

1. The Solar System (Ch. 4)
2. Earth and its Moon (Ch. 5)
3. The Terrestrial Planets (Ch. 6)
4. The Jovian Planets (Ch. 7)
5. Moons, Rings, and Pluto (Ch. 8)

C. Stars and Stellar Evolution

1. The Sun (Ch. 9)
2. Measuring the Stars (Ch. 10)
3. Star Formation (Ch. 11)
4. Stellar Evolution (Ch. 12)

D. Galaxies

1. The Milky Way Galaxy (Ch. 14)
2. Normal Galaxies (Ch. 15)
3. Cosmology (Ch. 17)