Minnesota State University Moorhead

AST 104: Stellar Astronomy

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 1

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

An introduction to the history of astronomy, stars, stellar evolution, galaxies and the origin and structure of the universe. Lab included. MnTC Goal 3.

B. COURSE EFFECTIVE DATES: 02/12/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Nature of science and history of astronomy.
2. Review of laws of motion and nature of light.
3. Properties of the sun.
4. Distance measurement in astronomy.
5. Properties of stars.
6. Stellar evolution.
7. Stellar remnants.
8. Properties of galaxies; dark matter.
9. Evolution of universe (big bang cosmology).

D. LEARNING OUTCOMES (General)

1. Distinguish between scientific and non-scientific ideas.
2. Apply basic physical laws to motions of stars.
3. Describe the source of energy in the Sun.
4. Describe the evolution of a low-mass and a high-mass star.
5. Describe and use appropriate methods of measuring distances in astronomy.
6. Explain the internal processes that drive the evolution of a star.
7. Compare and contrast stellar remnants.
8. Describe the evolution of the universe and the properties of galaxies.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted