

# Minnesota State University Moorhead

## AST 361: Stellar Astrophysics

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires the following prerequisite

MATH 323 - Multi-Variable and Vector Calculus

Corequisites: None

MnTC Goals: None

The application of physics to observations of stars and interpreting their formation and evolution. The course reviews the theory of radiative transfer within stars, stellar atmospheres and the formation of the stellar spectra we can observe, stellar structure, and stellar evolution.

**B. COURSE EFFECTIVE DATES:** 03/04/2013 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

### D. LEARNING OUTCOMES (General)

1. Explain our theoretical understanding of stellar structure, specifically the conditions necessary for hydrostatic equilibrium, as well as applying that understanding to other astronomical situations, such as planetary atmospheres.
2. Explain stellar evolution, not only why stars evolve, but where the evidence for various states of their evolution is found.
3. Explain the basic physical properties of stars and how we have determined them.
4. Use an understanding of light and its interactions with matter via the theory of radiative transfer to analyze astronomical data including optical and non-optical imaging and basic spectroscopy.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted