

# Minnesota State University Moorhead

## AST 362: Galactic and Extragalactic Astrophysics

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

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 our Milky Way galaxy and other galaxies and interpreting their formation and evolution. The course reviews the structure, composition, kinematics, and evolution of the Milky Way, other spiral galaxies, elliptical galaxies, and the large scale structure. We also review active galactic nuclei in light of galaxy evolution.

**B. COURSE EFFECTIVE DATES:** 10/07/2013 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

### D. LEARNING OUTCOMES (General)

1. Explain our theoretical understanding of composition of galaxies, including their stellar, gaseous and dark matter components and the interplay between these components.
2. Explain some elements of our current understanding of galaxy evolution and the role of active galactic nuclei in galaxy evolution.
3. Explain the basic physical properties of galaxies and how we have determined them.
4. Explain the structure of the universe from stars up to large scale structure, the properties of these structures, and the supporting observations.
5. Use an understanding of light and its interactions with matter in order 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