

# Minnesota State University Moorhead

## AST 366: Observational Astronomy

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

An introduction to the use of telescopes and CCD imaging techniques in astronomical research. Students are expected to take and reduce image data from the Feder Observatory for a research project as part of the course.

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

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Time scales in astronomy
2. Coordinate systems for astronomical objects
3. Magnitude system
4. Measurement of magnitudes from images
5. Reduction of image data
6. Differential photometry and transformation to the standard magnitude system

### D. LEARNING OUTCOMES (General)

1. Extract useful measurements from the reduced images (e.g. relative or absolute photometry).
2. Operate the telescope at the Feder Observatory.
3. Plan observations for a scientific project, including: Selecting date(s)/time(s) to take data at the Feder Observatory; generating finding charts for observations; choosing a method to analyze the data.
4. Reduce images taken at the Feder Observatory for a scientific project.
5. Select a scientific project appropriate to the equipment available at MSUM.
6. Use these measurements to reach a conclusion in a scientific project.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted