

## **Common Course Outline for: PHYS 1104 Survey of Astronomy**

### **A. Course Description**

1. Number of credits: 3
2. Lecture hours per week: 3  
Lab hours per week: 0
3. Prerequisites: None
4. Co-requisites: None
5. MnTC Goals: Goal 3 Natural Science

A one-semester survey course focusing on scales and structures of the universe, observable motions of the sun, moon, and stars, patterns within the solar system, life cycles of stars, evolution of the universe. Additional topics may include telescopes and light, planetary science, extrasolar planet discovery, and space exploration. Meets Minnesota Transfer Curriculum Goal 3 (Natural Science) competencies a, c, and d.

**B. Date last revised:** April 2017

### **C. Outline of Major Content Areas**

1. Planets
2. Stars and stellar evolution
3. Galaxies
4. Cosmology
5. Naked eye observing of the celestial sphere.

### **D. Course Learning Outcomes**

Upon successful completion of the course, the student will be able to:

1. Identify significant discoveries leading to the development of modern astronomy. (2a, 2b, 2c, 2d, 3a, 3d)
2. Explain the use of the basic tools of astronomical measurement and research, and the application of the laws of physics to those measurements. (2c, 2d, 3c)
3. Explain the relationship between astronomical observations and experiments and astronomical theories. (2c, 3c)
4. Explain the importance of principal astronomical discoveries. (2c, 2d, 3a, 3d)
5. Describe the evolution of the universe and entities within the universe such as planets and stars and the evidence on which the modern understanding of that evolution is based. (2a, 2c, 2d, 3a, 3c, 3d)
6. Identify, classify, and name the features of various astronomical objects (planetary, stellar, and galactic). (3a)
7. Use astronomical terms intelligently. (3a)

**E. Methods for Assessing Student Learning:** Assessment methods are at the discretion of the instructor and may include written and/or oral reports, homework, projects, quizzes, exams, a final exam, and projects.

**F. Special Information:**

1. This course is *not* a prequel to Physics 1114, Introductory Astronomy. The content of this course is similar to 1114 and students will not be able to transfer both courses.