ROCHESTER COMMUNITY & TECHNICAL COLLEGE
COMMON COURSE OUTLINE: Course discipline/number Earth Science 1134

A. CATALOG DESCRIPTION (include prerequisites)

Course Title: Stellar Astronomy
Credits: 3
Hours/Week: 2 hours lecture and 2 hours lab per week
Semester Offered: Summer
Prerequisites: None

This course will meet the requirements for the Minnesota Transfer Curriculum in CT (Critical Thinking) and NS (Natural Sciences).

This course is a non-mathematical introduction of stellar astronomy for the non-science major. The course covers topics that include light spectra, the sun, stars and galaxies.

In the laboratory, we will use computer simulation to study the night sky and the topics covered in class.

B. DATE LAST REVISED (use current date): October 1998

C. RECOMMENDED ENTRY SKILLS/KNOWLEDGE:

12th grade reading and writing skills and working knowledge of elementary algebra

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Radiation and Spectra
2. The Sun: Structure
3. The Sun: Nuclear Powerhouse
4. Kinds of Stars
5. Distances
6. Life Cycle of Stars
7. Milky Way Galaxy
8. Galaxies
9. Quasars and Active Galaxies
10. Other topics of interest to class

E. LEARNING OUTCOMES (GENERAL):

Students will learn some common definitions of terms found in stellar astronomy. Students will be able to describe the structure and life cycle of the sun, stars and galaxies.

F. LEARNING OUTCOMES (MNTC):

Critical Thinking

a. Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive and conscious of possible bias in the information selected.
b. Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.
c. Analyze the logical connections among the facts, goals and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.

Natural Sciences

a. Demonstrate understanding of scientific theories and the ways in which scientists develop, express and question theories in the field of physics.
b. Formulate and test hypothesis by performing laboratory experiments requiring the collection of data, its statistical and graphical analysis and an appreciation of its sources of error and uncertainty.
c. Communicate their experimental findings, analyses and interpretations both orally and in writing.
d. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented and make informed judgments about science-related topics and policies.

G. METHODS FOR EVALUATION OF STUDENT LEARNING:

Evaluation methods may include any or all of the following: objective exams, essay exams, research papers, quizzes, written homework, small group projects, oral presentations, laboratory reports, or any other as deemed appropriate by the instructor and so indicated by his/her syllabus (original or revised).

H. SPECIAL INFORMATION (fees, directives on hazardous materials, etc.): None