

PHYS 1060
Astronomy: Stars and Galaxies
Fall 2009
MWF, 8:30-9:20 a.m. NOYES 130

Instructor: Lynn Lindsay **Office:** NOYES 84 **Phone:** 283-7511 **E-mail:** Lynn.Lindsay@snow.edu

Text: Universe: Stars and Galaxies 2nd ed. by William J. Kaufmann III and Roger A. Freedman.

Prerequisites: Math 1011 (Intermediate Algebra) or equivalent. This class fulfills physical science GE but is not a lab course.

Course Objectives: The student will be able to:

- Locate in the sky and name prominent stars
- Locate in the sky and name prominent constellations and relate a mythological story about them
- Describe the celestial sphere and its use
- Show, by drawing or manipulating objects, the different types of lunar and solar eclipses
- Show, by drawing or manipulating objects, what causes the earth's seasons
- Describe the birth, life, and death of stars using the sun as a model
- Describe the formation of the solar system
- Describe the formation of a galaxy
- Describe the formation of the universe
- Be able to use physical laws (equations) to solve simple astronomical problems

Topics: Origins of astronomy, astronomical tools, atoms and starlight, the model of the sun, models of star types, galaxies, cosmology. Our guiding question will be "How do we know?"

Tools: You need a good scientific calculator. If you have access to binoculars, please bring them on observation nights.

Expectations and How to Get Help: Both asking and answering questions should prove you've delved deeply into the chapter material. . If you are serious about this class a large portion of your learning will take place outside of class time. You should plan on spending at least 2 hours in outside study for every hour in class. You are encouraged to see me during my office hours and at other times by appointment; you may also get help by e-mail. You will be required to keep a daily journal of your personal observations of the changes in the sky during the semester.

Night Labs: To fulfill the objectives of the course you will need to spend some time looking at the night sky. You should attend at least 12 night observations with the class, weather permitting. These are scheduled to be each Thursday night at 9:00 p.m.

Homework: Homework will be assigned from the questions at the end of each chapter (doing more than assigned can really aid understanding). These will be assigned during class time and due the next class period. You are encouraged to work together in groups, but please make sure you understand everything you turn in. You must show your work and do your own work. Do not copy other student's homework! Homework is due at the end of the class period on announced due dates. Homework that is late for any reason other than a pre-approved legitimate excuse will lose 25% per day late. No homework will be accepted after the last day of class.

Quizzes: A short unannounced quiz may be given at any time to assess your reading diligence.

Tests: There will be a take home test after each unit. Use a #2 pencil on the bubble sheet.

Schedule: The pace will be about 16 pages per day. The final exam is scheduled to be taken on December 13 from 7:00 to 9:00 am. The exam will be comprehensive.

Grading: Homework 20%, Quizzes 15%, Tests 20%, Participation/Attitude 10%, Final Exam 20%, Participation in night observations 15%