

PHYS 1060, Astronomy: Stars and Galaxies

Maymester 2014

MTWRF, 9:00-12:15 SCNCE 123

Instructor: Larry Smith SCNCE 111 283-7520 Larry.Smith@snow.edu <http://www.snow.edu/larrys>

Text: *Universe: Stars and Galaxies* split 4th ed, or full version 9th ed. by Freedman, Geller, Kaufmann. Bundled with Starry Night CD-ROM. Buying a Planisphere from MaJock Bookstore is optional but a great idea.

Prerequisites and GE: Math 1010 (Intermediate Algebra) or equivalent. This class fulfills physical science GE, but **not** the laboratory requirement.

Objective: Become acquainted with the night sky and appreciate the beauty of nature. Understand the laws of science that govern heavenly bodies. Learn how scientists think and work; learn how astronomers know things.

Topics: Origins of astronomy, astronomical tools, atoms and starlight, formation, structure, and death of stars, galaxies, cosmology. Our guiding question will be “How do we know?”

Tools: You need a good calculator. If you have access to binoculars that would be helpful as well. E-mail.

Expectations and How to Get Help: Both asking and answering questions should prove you’ve delved deeply into the chapter material. Also subscribe to the class e-mail list (LS-red); you are responsible for information disseminated there. Subscription instructions are at <http://www.snow.edu/larrys/Subscribing.html>.

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 posted office hours (M-F 12:15-12:45) and at other times by appointment; you may also get help by e-mail (either to me privately or to the class list, LS-Red).

Students with medical, psychological, learning or other disabilities desiring accommodations, academic adjustments, or auxiliary aids will need to contact the Disability Resource Center, room 247 Greenwood Center, phone number (435) 283-7244. The Americans With Disabilities Act (ADA) Coordinator at the Disability Resource Center (DRC) determines eligibility for and authorizes the provision of appropriate services and aids.

Night Observations: To fulfill the objectives of the course you will need to spend some time looking at the night sky, both with the naked eye and the aided eye. You should attend as many night observations with the class as possible, so leave your late evenings open.

Homework: Homework will be assigned from the questions at the end of each chapter (doing more than assigned can really aid understanding). You are encouraged to work together in groups, but please make sure you understand everything you turn in. You must show work. 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 late homework after May 20 will be accepted. Some homework may be assigned (and turned in) over e-mail (LS-Red).

Quizzes: A short quiz at the beginning of each chapter will assess your prior reading diligence.

Tests: There will be a test after each unit (part) in the Testing Center (M-F 9:00-5:00). Take a #2 pencil.

Schedule: The pace will be about a chapter and a half per day. The final exam is scheduled for Friday, May 23 in class. It will be comprehensive.

Group Work: Much of our in-class time will be spent doing group work. It is important that you come prepared each day or your group suffers with you. Please read each chapter before it is discussed in class.

Grading: Please select the grade you wish to receive and conduct yourself accordingly.

For a **D** do the following:

- * Actively participate (this includes regular attendance), and subscribe to the class e-mail list.
- * Subscribe to the following podcasts: 60-Second Space, 5-min Astronomy, and Cheap Astronomy.
- * Watch one episode of astronomy videos from the library and turn in a one-page summary.
- * Attend at least six night observations.
- * Demonstrate that you can identify at least three constellations in the night sky.
- * Have a 60% or better overall on all homework, quizzes, and tests.

For a **C** do the following in addition to the above:

- * Keep a nightly sky journal.
- * Write a short (one paragraph) report on a podcast episode from each of the three.
- * Watch another episode of astronomy videos from the library and turn in a one-page summary.
- * Attend at least seven night observations.
- * Demonstrate that you can identify at least six constellations in the night sky.
- * Have a 65% or better overall on all homework, quizzes, and tests.

For a **B** do the following in addition to the above:

- * Read two articles from astronomy magazines and summarize them to the class e-mail list.
- * Write a script for an astronomy podcast, like those on the podcasts you are subscribed to.
- * Watch another episode of astronomy videos from the library and turn in a one-page summary.
- * Attend at least eight night observations.
- * Demonstrate that you can identify at least nine constellations in the night sky.
- * Have a 70% or better overall on all homework, quizzes, and tests.

For an **A** do the following in addition to all of the above:

- * Write a 5-7 page term paper about some astronomical topic. Include a poster for public display.
- * Make an audio podcast of your astronomy podcast script.
- * Watch another episode of astronomy videos from the library and turn in a one-page summary.
- * Attend at least nine night observations.
- * Demonstrate that you can identify at least twelve constellations in the night sky.
- * Have a 75% or better overall on all homework, quizzes, and tests.

Please see my web site for details on these tasks. No grade can be earned without satisfactory completion of all the tasks for all lower grades.

Pluses and minuses from the straight letter grades may be awarded at the discretion of the instructor, pluses for stellar work, minuses for mediocre work.

The weightings for the categories for homework, quizzes, and tests are:

Homework	25%
Quizzes	25%
Tests	25%
Participation/Attitude	5%
Final Exam	20%