Astronomy 162  
Professor Lee Riedinger

Required Materials
The following should be available in the university bookstore. The first two items are in the Astronomy section of the textbook area and third item is available in the information area in the center of the textbook area.

3. A CPS/RF "clicker," which looks like a bit like a TV remote control.

The subject matter for this course will be Chapters 13 to 21 in the textbook by Hester et al. This material includes:
- *Stars and Stellar Evolution*
- *Galaxies, the Universe, and Cosmology.*

Class Meeting Times
Lecture: 10:10 am - 11:00 am Monday, Wednesday, and Friday in Nielsen Physics 415

Grades
The lecture portion of this course will determine 75% of your grade and the laboratory portion 25%. Attendance at every lab is mandatory. All lab work must be completed to void a grade of I or F. In the lecture, three 50-minute tests will be given.

Grades are determined by performance in three categories:
- Quizzes: 15%
- Tests (three in total): 60%
- Laboratory: 25%

Quizzes
I plan to give in most or all class periods a pop quiz question, which you will answer with your clicker. Your clicker must be registered with this class. This is accomplished in Blackboard by pressing the "Clicker Setup" button on the course menu at the left and following the instructions. A registration fee will be required as part of this process (unless you have already purchased a lifetime registration in connection with use in previous courses).

Exams
There will be three tests during the semester. A tentative schedule for the tests is:
- Test #1 - February 15 – chapters 13, 14, 15 – star properties and star birth
- Test #2 – March 12 – chapters 16 and 17 – death of stars
- Test #3 – May 6 – chapters 18, 19, 20, 21 – galaxies and the universe

These three tests are closed book and closed notes and are a combination of multiple choice, completion, and essay questions.
Makeup tests:
There will be a makeup test given a few days after test #1 and after test #2, on the same material as for the normal test. In marked contrast to the normal tests #1 and 2, the makeup for each of these will be purely essay questions. There is not a makeup for the third test.

Lab
This is a laboratory course, and with this comes a university requirement that all lab work be completed in order to receive a passing grade for the course, regardless of what you score in the other elements of the course. All lab sections meet in Nielsen 507 and are run by a lab instructor. Be sure to attend each of your lab section's scheduled sessions (normally each week, except generally the first week and weeks with a holiday). There will be a single make-up lab toward the end of the semester, in case an illness or emergency causes you to miss one of your regularly scheduled lab sessions.

All labs are held in Nielsen 507. There are six lab sections available:
1. 162001 Wednesday 8:00 – 9:55
2. 162002 Tuesday 2:30 - 4:25
3. 162003 Wednesday 2:30 - 4:25
4. 162004 Tuesday 4:40 - 6:35
5. 162005 Wednesday 12:20 - 2:15
6. 162006 Wednesday 4:40 - 6:35

Extra Credit
Extra credit is designed to boost your grade over a boundary to the next grade, assuming you are close to the higher grade based on the components discussed above – the three tests, the labs, and the quizzes. Extra credit is meant to help remove the harmful effect of unexpectedly doing badly on one test, for example.

There are two forms of extra credit:
- Diagnostic quizzes available in Blackboard at the completion of each chapter. These quizzes are composed of generally 25 multiple-choice questions that are very relevant to the material of the chapter, so relevant that I might even choose to lift an occasional question from the diagnostic quiz for the in-class tests. One can take these each quiz on-line up to three times, improving your score and learning the material better. Getting all or nearly all 25 questions correct would likely generate a half point on your final average, and so doing all nine diagnostic quizzes correctly (there are nine chapters to be covered) would generate up to 4.5 points on the final average.
- Telescopic observations of the sky. Be aware that one or two of the laboratory exercises will involve use of the Physics Department telescopes for measuring things in the sky. There is a sign up sheet for these “T labs” (telescope lab sessions) on floor five of the Nielsen Physics Building. But, in addition to these normal lab exercises, it is possible to do other shorter sessions with the telescopes for extra credit.
Day and evening telescope observation sessions are available from the roof of the Physics building, conducted by Mr. Paul Lewis. These sessions last about 45 minutes. You must sign up in advance on lists posted on the small corkboard outside room P415 (Nielsen Physics Building). Read Mr. Lewis' instructions carefully when you sign up. Failure to follow his guidelines can result in loss of the extra credit privilege. If you sign up, please show up or else email Mr. Lewis (gplewis@utk.edu) and give a valid excuse to him for your needing to miss the session (e.g., illness). If you know early enough during the day that you cannot attend a session, you may try to contact Mr. Lewis by phone at 974-9601.

You must be on time for these sessions, as Mr. Lewis has to run a tight ship and will shut the door to the roof before he starts each session. So, arrive a little early to be sure that you are not left out of the session.

Even if you cannot see the sky clearly, you still need to come to the session that you signed up for. It is also important that you try to do your observing as early as possible in the semester, since bad weather usually causes many cancellations of extra credit sessions. This causes many students to miss their chance at extra credit.

At sessions where weather prevents observation, Mr. Lewis will talk to you and show an astronomy videotape from our astronomy library. These sessions will be held in a classroom to be designated on that night by Mr. Lewis. He will post that information on the chalkboard at the roof entrance. These sessions also earn extra credit.

One solar and one evening observing session will be considered for extra credit. A stamped form from Mr. Lewis PLUS a one-page essay description (typed) of your observing trip must be handed in to me for you to get the full credit. An average report for each of these two sessions would give one point added to your final average, an exceptional one perhaps 1.5 points.

Mr. Lewis occasionally provides additional extra credit opportunities when appropriate. These might include a lunar or solar eclipse observation and meteor shower or comet viewing. Mr. Lewis will post these additional opportunities on the bulletin board outside of P415. These extra events might be held off campus, in which case Mr. Lewis will provide directions to the selected site.