Astronomy 131  Elementary Astronomy I  
Fall 2007  T - Th, 9:40 - 11:00 in ULH 101  

Instructor:  David Friend  Office:  CHCB 127  Phone:  243-5283  
Office Hours:  M 2:10–3:00, T 1:10–2:00, W 11:10–12:00, R 1:10–2:00, F 9:10–10:00  
(and other times when you can catch me)  
Text:  No required text (several books on reserve in the library and an optional text, Horizons; Exploring the Universe, available at the bookstore)  
Web Site:  www.physics.umt.edu/astr131/  
General Education:  For general education credit you MUST take it for a traditional grade (A - F), and you must get at least a C- for it to count  

Course Description:  This course is an introduction to three major aspects of astronomy: 1) the night sky as we observe it from Earth, 2) a history of how we have come to understand our solar system and universe (including telescopes and other instruments), and 3) the nature of the objects in our solar system. (The nature of stars and galaxies is covered in Astronomy 132). The topics that we will cover are spelled out in the outline. We will spend a lot of class time exploring different topics, either as a whole class, or sometimes in smaller groups, rather than just having me lecture to you. I want to make this course oriented more toward exploration and discovery rather than just the imparting of facts and information. During class I will also be showing a number of pictures, videos, films, demonstrations, and computer simulations, and we will often discuss them afterward. If you are looking for a science course that you can pass by just listening or reading and memorizing, then you are in the wrong course. The only math you need to know for this course is basic high school algebra and geometry. We will do some mathematical problems, but they will not be the major focus of the course. It will be very helpful (though not essential) to have a computer with internet access, since I will be posting many of the class materials on a web page. Even though this is a very large class, I would like it to be as informal as possible. Please feel free to interrupt me and ask questions during class, and don't hesitate to visit me in my office (which doubles as a Star Trek museum).  

Study Groups:  For homework assignments (and in-class concept quizzes) you can work in study groups of up to 3 people. These will be established during the first week or two of the course. Study groups might want to sit together during class so members can confer with each other. To form a study group you just need to give me a piece of paper with the names of everyone in the study group, and each person must sign their name too. Study groups of one are OK; if I don't receive a study group list with your name on it, I will assume that you will be working alone. To avoid having some people use the study groups as a way of getting others to do the work for them, on each homework assignment each member of the study group must sign their name to get credit for it. I will keep a folder with a copy of everyone's signature in it and I will check signatures to make sure no one is covering for anyone else.  

Concept Quizzes:  During every lecture we will have at least one concept quiz, which is a way for me to get feedback during class on whether you are learning the astronomical concepts I am trying to teach you. NOTE: THEY WILL NOT BE GRADED! These quizzes will consist of a single multiple choice question. At first I will ask for answers without having you discuss the question. If most people get the right answer, we will move on. If not, you will discuss the question in small groups and I will ask for answers again. If a substantial number
of groups are still not getting the right answer, I will discuss the concept some more. As an added incentive for you to come to class and participate in these quizzes, every quiz question (perhaps in a slightly modified form) will be a question on the next exam!

**Homework Assignments:** There will be 6 homework assignments which will be posted on the web page a week or two before they are due. You can turn them in to the homework box which I'll bring to class the day they are due, or to the locked homework box which will be outside the Physics and Astronomy office (CHCB 126) by roughly 9:00 AM the next morning. All of the assignments will involve some mathematical problems as well as conceptual questions. The first assignments involve some observing of the sky, but if you can't get out to see the real sky at night, you can complete these assignments using planetarium software or star charts instead. A single assignment will be turned in by each group. Late assignments will only be accepted with a valid excuse (and probably with a late penalty), since I will post answers to them. NOTE: Your lowest homework score will be dropped in the final grade.

**Exams:** We will have three major exams, and the third one will not be comprehensive. Make-up exams will only be given when I am notified of a conflict or illness on the day of the exam or before. The exams will contain only multiple choice questions; you will need to bring a scantron sheet to each of the exams. You may not use your books or notes during the exams. Exam questions will be entirely based on what you learn in class and in the homework assignments, since there is no required textbook. The emphasis on exams will be on understanding rather than just knowing the facts. My multiple choice questions are well known for being subtle (some would even say tricky!). There will be practice exam questions and learning objectives posted on the web page shortly before each exam, and I will hold a help session the afternoon before each exam.

**Web Site:** The course web site will have an outline of the lectures for each day. These outlines will appear the day before each lecture, so you can print them out and bring them to class if you want. The site will also have the homework assignments, practice exam questions, study outlines for exams, interesting astronomy links, and a copy of the syllabus.

**Computer Lab:** A Macintosh computer lab (in CHCB 110) will likely be available for your use at certain hours. A lab monitor/teaching assistant will be there during those hours. He/she can help you with homework problems and help you use astronomy software which may be useful in completing some of the assignments. The hours that the lab will be open will be announced at the second lecture (and posted on the web page).

**Blue Mountain Observatory Open Houses:** There will be public open houses at the University’s Blue Mountain Observatory on September 7th and 14th (weather permitting), starting about 9:00. I will give directions and more details in class for those who are interested. If there is interest, we may have a special night at the Observatory just for this class, possibly in early October.

**Grades:** Final grades will be calculated according to these percentages:
Each of the three exams will be worth 25% and the homework will be 25%
Note: I usually give about 15-20% A's, 25-30% B's, 30-35% C's, and 15-20% D's and F's

**Add/Drops:** The last day to add or drop by Cyberbear is Monday, Sept. 17th The last day to drop or change grading option (without petition) is Monday, Oct. 8th The last day to drop by petition (with written documentation of extenuating circumstances) is Friday, Dec. 7th