

SYLLABUS FOR AST 301 (46710): INTRODUCTION TO ASTRONOMY

<http://www.as.utexas.edu/astronomy/education/spring12/dinerstein/301.html>

Unique Course No: 47610, Spring 2012

Class Meetings: MWF 1:00 – 1:50 PM, Welch 3.502

Instructor: Prof. Harriet Dinerstein, RLM 16.324

Instructor Contact Info: 471-3449, harriet@astro.as.utexas.edu

Teaching Assistant: Kevin Gullikson, RLM 16.318

T.A. Contact Info: 471-3466, kgulliks@astro.as.utexas.edu

Help Sessions: Thurs., 5 – 6 PM, RLM 15.216B

Office Hours: Wed. 11 – 12 (T.A.), Thurs. 1:30 – 2:30 (Prof.)

THE BIG PICTURE:

Of course, astronomy is *all about* the big picture! You probably signed up for this class because you need a science elective, you think planets, stars, dark energy, etc., are cool, or both. While this class will take primarily a conceptual approach to the material, in astronomy you simply can't get away from big numbers! So we will use some simple math in order to appreciate the scales of things and determine new facts from given information. If you are a science or engineering major who likes to work extensively with formulas and calculations, you may find Ast 307 (47635) more to your taste. Ast 301 itself is designed for *non-science* majors. This class will give you a broad overview of the Universe, from the near and familiar to the far and exotic. My goals are that, by the end of the semester, you should:

- Be able to explain how sky phenomena such as day/night, seasons, lunar phases, are due to the positions and motions of the Earth and other astronomical bodies.
- Know what tools and principles astronomers employ to figure out characteristics of planets, stars, and galaxies, etc. using merely the light they send us.
- Be familiar with the properties of our Solar System and how our understanding of it has changed as a result of space exploration and recent astronomical discoveries.
- Distinguish between things we can measure in a straightforward way and those that require applying laws of nature and several steps of reasoning or calculation.
- Place the Earth and humanity in the broad context of space and time; know the storyline of the past and future history of the Sun, Milky Way, and Universe.

TEXTBOOK AND ONLINE RESOURCES:

The essential (pun intended!) textbook is “The Essential Cosmic Perspective, 6th ed.” by Bennett, Donahue, Schneider, and Voit. (See **Caveat** below.) I also very strongly recommend getting an access account at MasteringAstronomy.com, the publisher's website, which has an array of tools for engaging with the course content and assessing your own progress. In an effort to keep the price moderate,

I ordered the textbook in loose-leaf (a la carte) format through the UT Coop. This gives you the option of carrying around only one chapter or section at a time, and combining the text with other materials such as in-class notes, lecture slides, and graded homeworks, and quizzes. The Co-op package, option (1), consists of the loose-leaf book bundled with the website access code, and should cost about \$95. If you are keen to find a lower-cost alternative, there are a couple of possibilities.

(2) You can obtain a used, bound copy of the book and buy the web account separately on line. Since the latter costs \$42.90, you won't save over the Co-op package unless you get a really good deal on the book. Some used copies may be available at Austin TXbooks on Guadalupe, or sites such as Amazon, Powells, etc.

(3) You can purchase the textbook in electronic format (as an eBook), along with the website access. This will cost \$78.00, though you won't have a paper book.

Directions for activating or purchasing your access account and/or eBook: go to www.masteringastronomy.com. Under "Register," click the "Student" button. If you bought a physical book packaged with the on-line account, you'll find the access code in the cardboard envelope. If not, you can buy your account online at this time. **Be sure to select the correct edition of the textbook** (you'll have to click the right arrow once to even see it). You will then be given the choice of buying the website access only, or this access plus the eBook. You will be able to access the eBook and web tools only when on line. There is no Course ID for this class because we will not use the testing and gradebook features of this website; grades will be on Blackboard.

(In case you were wondering, CourseSmart does offer an electronic version of the textbook, but you can't take notes in it, and at \$78.99, it costs more than option 3.)

Caveat: You should avoid purchasing a version titled "The Cosmic Perspective," the longer version of this book, because the chapters are organized differently and the assigned readings will not correspond. *Definitely* do not buy a version with the phrase "The Solar System" or "Stars, Galaxies, and the Universe" in the title, because these editions will be missing significant sections of the material.

COURSEWORK AND GRADING:

My grading philosophy is that all students should have the opportunity to earn a grade based on their own individual work, so I do not set quotas for A's and B's. After the first in-class exam, I will set up a table of numerical score – letter grade equivalents, which will remain fixed for the rest of the semester. I do use +, – grades. The test/assignment schedule and credit breakdown will be as follows:

Hour Exams: There will be three in-class exams consisting of multiple-choice questions. Each is worth 20% of the course grade, for **60% total**. The probable exam dates are Feb. 17, Mar. 30, and May 4. Help sessions will be held the evening before each exam. If you miss *any* of the exams, even for a justified, documented reason, your make-up exam will take place during the official final exam time slot, **9:00 AM – noon on Fri., May 11**. (I do not give make-ups for individual missed exams.) Students who have not missed any exams but would like to try to improve their grade are welcome to make use of the make-up exam during finals week.

Quizzes: We will have several brief (10 minute) quizzes, consisting of short-answer essay questions. The best 5 quiz scores will count towards **15% of the semester grade**. There will be no make-ups for missed quizzes, since we will give a sufficient number of them to make up for a reasonable number of absences.

Homeworks: The purpose of the homework is to ensure that students think about the material and practice answering questions similar to those on the quizzes and exams. It is our policy that your homework *must represent your own work*. Therefore, although you are welcome to discuss the general approach with fellow students, and encouraged to get help in getting started, you need to write up your own answers. Homework will be accepted only in hard copy form (**emailed homeworks will not receive credit**). Copying answers from other students or websites will be treated as academic dishonesty. The lowest homework score will be dropped, and the total will count for **15% of the semester grade**. (See late policies, below.)

Participation and Other Assignments: **The remaining 10%** of the semester grade will come from credit earned in various ways including in-class activities, attending (up to 2) UT Star Parties, public lectures, etc. Details will be announced and posted.

CLASSROOM EXPECTATIONS AND POLICIES:

I expect students to attend class regularly and to engage in the class activities. This is the best and most efficient way to become familiar with the material and to be well prepared for quizzes and exams. I understand that students occasionally become ill, or have an urgent conflict, and have arranged the classwork to make allowances for missing a couple of classes. Consequently, I do not provide make-up opportunities for *individual* missed quizzes or assignments, but instead expect students to make up the credit through other, equivalent opportunities.

Late Policies: Because grading of the homework will usually be performed over weekends, homework *must* be turned in on time (in class on the due date) to receive credit. In very exceptional cases with documented valid reasons homework will be accepted with a small late penalty at the following class day, but *only at the discretion of the Instructor* (the T.A. does not have the authority to grant this).

In order to make class time more valuable and minimize distractions to your classmates and the instructor, there will be **no cell phone use**, including texting, during class (and make sure the ringer is off!). I also very strongly discourage the use of laptops in class. They are a major distraction to the user and to others, and will interfere with participation in in-class credit-earning opportunities.

KEY DATES FOR THE SPRING 2012 SEMESTER:

First class meeting: Wed., Jan. 18

Last day of official add/drop period: Fri., Jan. 20

Last day to add a class, or to drop with a possible refund: Wed., Feb. 1

Last day to drop a class except for **non-academic** reasons: Mon., Apr. 2

Last class meeting (and Exam 3): Fri., May 4

Universal make-up exam (for missed hour exam): Fri., May 11

PRELIMINARY SCHEDULE OF TOPICS: (subject to change)

Part I: Developing Perspective (ch. 1 – 3)	Jan. 18 – Feb. 6
Part II: Key Concepts (ch. 4 – 6)	Feb. 8 – Feb. 15
Part III: Solar System & Planets (ch. 6 – 9)	Feb. 20 – Mar. 3
Part IV: The Sun & Stars (ch. 10 – 13)	Mar. 6 – 8; Mar. 19 – Apr. 13
Part V: Galaxies & Beyond (ch. 14 – 17)	Apr. 16 – May 2

Probable Exam Dates: Feb. 17, Mar. 30, and May 4

Universal Make-up Exam: Fri., May 11, 9 AM – noon (Also available to any student who would like to try improving his or her grade; best 3 exams count.)

GENERAL INFORMATION FOR ASTRONOMY COURSES:

Scholastic Integrity/Academic Dishonesty: The University of Texas at Austin's honor code is posted at http://deanofstudents.utexas.edu/sjs/spot_honorcode.php. More information is provided at <http://deanofstudents.utexas.edu/sjs/index.php>; see links on "academic integrity" and "plagiarism." We take these rules seriously. *We will not tolerate copying or cheating on exams, homework, or other classwork.* If we find duplicated work or evidence of cheating, no student involved will receive credit. We may also impose stronger academic penalties depending on the circumstances, which could potentially result in an F for the course and/or a report to the Dean of Students.

Getting the Help You Need: There will be several regularly scheduled opportunities to get help with assignments or understanding the material each week. Help sessions will be held most Thursday afternoons from 5 – 6 PM in RLM 15.216B, and there will be weekly office hours held by both the TA and instructor. Please try to come at one these designated times, if possible, since we have other responsibilities and will not necessarily be available at other times. However, if you cannot make the regular office hours, please contact us to set up an alternate time. You can also send questions by email. If your question is about class procedures, please check the Frequently Asked Questions page on the class website *first*, to see whether the answer is already there.

Students with Disabilities: Upon request, the University of Texas at Austin provides academic adjustments for qualified students with disabilities. Contact the Office of the Dean of Students at 471-6259, or (TTY) 471-4641, email to ssd@uts.cc.utexas.edu or see <http://deanofstudents.utexas.edu/ssd/>. If you have a recognized disability, you need to inform the instructor as soon as possible in order to make arrangements.

Star Parties and Special Events: The Astronomy Department offers evening Star Parties on campus most Wednesdays, Fridays, and Saturdays. Details on when and where are posted at <http://outreach.as.utexas.edu/public/viewing.html>. You can earn up to two participation credits by attending star parties, if you obtain a signed slip from the person in charge. **Warning:** *Star parties are held only when you can see stars. If one is cancelled due to bad weather, you can't earn the credit.* There may also be one or more public lectures on astronomy during the semester, which you can attend for participation credit if you turn in a short write-up. However, it should not be necessary to do activities outside of the class period in order to earn the full credit for participation, as there will be sufficient opportunities for this during regular class time.