ASTR 100 – Introduction to Astronomy  
Spring 2016 Syllabus

Instructor Information

Name  Professor Hardegree-Ullman  
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Office Hours  Thursdays, 2:15 – 5 pm, or by appointment

Course Information

Section 1 (CRN 30779): MWF, 10:00-10:50 am, 124 Burrill Hall  
Section 2 (CRN 39258): MWF, 11:00-11:50 am, 180 Bevier Hall

Credit: 3 credit hours. This course satisfies the General Education Criteria for a Physical Sciences (Natural Sciences and Technology) course. Credit is not given to students with credit in ASTR 121, ASTR 122, or ASTR 210. College of Engineering students will not receive credit towards graduation for ASTR 100.

Prerequisites: None.

Course Description

ASTR 100 is a one-semester introduction to astronomy. In this course we will discuss the nature of science; sun, planets, and moons; origin of the solar system; nature and evolution of stars; stellar remnants, including white dwarfs, neutron stars, and black holes; extrasolar planetary systems; galaxies and quasars; dark matter and dark energy; the Big Bang and the fate of the universe; and life in the universe.

Course Objectives

I want graduates of this course to begin to understand the following:

- **Our place in the cosmos:** This doesn’t only mean our “cosmic address,” but also where we are in the evolutionary processes that have shaped the universe.

- **How we know:** It is just as important to know how humanity has learned to understand the universe as it is to understand “what we know” about the universe today. In this course, we will explore science as a way of learning about nature through observation, experimentation, and theory, and you will come to understand it as a creative, human, and often messy process.
Course Resources

Textbook: *The Cosmic Perspective*, by Bennett, Donahue, and Schneider, 7th edition. Used textbooks, electronic versions, or 6th or 8th edition copies should be sufficient; additionally, a copy of the course textbook is on reserve at Grainger Library.

i>Clicker: Participation in lectures requires the use of an i>Clicker remote. Please make sure that you register your device using the i>Clicker registration link on the course webpage.

Course Webpage: Located at [https://compass2g.illinois.edu](https://compass2g.illinois.edu). The course schedule, lecture slides, assignments, and grades will be posted on the course website. Check the course page frequently as materials are routinely updated.

Course Grades

Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Overall Grade</th>
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</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>A: 90-96.99%</td>
<td>A+: 97-100%</td>
</tr>
<tr>
<td>Good</td>
<td>B: 80-86.99%</td>
<td>B+: 87-89.99%</td>
</tr>
<tr>
<td>Average</td>
<td>C: 70-76.99%</td>
<td>C+: 77-79.99%</td>
</tr>
<tr>
<td>Deficient</td>
<td>D: 60-66.99%</td>
<td>D+: 67-69.99%</td>
</tr>
<tr>
<td>Failing</td>
<td>F: 0-56.99%</td>
<td></td>
</tr>
</tbody>
</table>

Grades will not be curved or “rounded up” at the end of the semester.

Grade Components  Percentage of Overall Grade:
Exams 30%
Homework 30%
Online Labs 20%
Observing Reports 10%
Lecture Participation 10%
Total 100%

Assignments & Exams

Exams: There will be three in-class midterm exams and one cumulative final exam. Exams may consist of multiple choice, true/false, fill-in-the-blank, or short answer questions.

You may bring one 3” x 5” note card to each exam. You must bring your official university identification card (to show upon request) to each exam.
Your lowest exam grade (midterm or final) will be dropped at the end of the semester if you: a) take the final exam, or b) officially opt-out during the final week of class. Students who skip the final exam without officially notifying the instructor (according to instructions on the course website) will lose this privilege, receiving a zero that cannot be dropped.

**Homework:** Assignments will be due approximately every week and will consist mainly of multiple choice questions. These must be turned in online (see instructions on the course website). After your first submission, you will be able to review your answers. You can then re-submit new answers BEFORE the due date, and you will be credited with the higher score.

Assignments are due during normal business hours so that you have ample time to consult the Technology Services Help Desk (217-244-7000, consult@illinois.edu) should any computer issues arise.

**Online Lab Exercises:** To enhance your understanding of particular topics in the course, you will be assigned to complete four online laboratory exercises over the course of the semester:

- Lunar Phases Lab: explore how the Earth-Sun-Moon geometry gives rise to the Moon’s phases.
- Planetary Orbits Lab: explore Kepler's Laws of Planetary Motion and how basic Newtonian concepts relate to orbits.
- Extrasolar Planets Lab: examine how we search for planets outside our solar system.
- Hertzsprung-Russell Diagram Lab: explore how other stars appear relative to the Sun.

You are encouraged to work on the labs with partners (up to three students total working together in one group) and to turn in one lab report for the group.

**Observing:** You are required to attend and complete reports for at least two observing opportunities during the semester. If you complete all three, you may earn up to 2% extra credit towards your overall course grade.

- Planetarium Show (off-campus, $3, reservations required): an 80-minute presentation at a local planetarium that will illustrate motions of the sky.
- Night Sky Observing (on-campus, free, subject to weather conditions): an evening observing session at the campus observatory.
- Solar Observing (on-campus, free, subject to weather conditions): a daytime session to observe the surface features of the Sun.
Detailed instructions regarding these sessions are posted on the course website. If you are unavailable for an activity due to unavoidable circumstances, see the instructor immediately.

**Lecture Participation:** Points will be awarded on a daily basis for active lecture participation. The majority of participation points are earned by responding to “concept check” questions during lecture using an i>Clicker remote. (Occasional in-class activities may also be included in your participation grade.)

Credit is awarded for both attempting i>Clicker questions and for selecting correct answers (when they exist). To receive i>Clicker credit, your device must be registered to your NetID. Information on registering your i>Clicker to your NetID can be found on the class website. The original i>Clicker, i>Clicker2, and i>Clicker+ should all work for ASTR 100.

Participation points will not be excused for any reason. There are sufficient extra credit opportunities to make up for a handful of missed lectures.

**Class Policies**

**General:** This course will follow all policies in the *Student Code* (http://studentcode.illinois.edu).

**Attendance:** You are expected to attend lectures. I will cover material in class that will not always be in the readings, and the lecture material will be included on the exams. Class time is most valuable to you if you come prepared, ready to actively engage the material.

**Rules of Etiquette:** For the benefit of your fellow students and your instructor, you are expected to follow these basic rules of decorum.

- Be attentive in class. Do not use headphones, read newspapers, or prop your feet up on other chairs or desks. Phones, laptops, tablets, iPods, etc. should all be silenced and stowed away during class. The use of such devices is distracting to you, your fellow students, and your instructor. Chronically disruptive or inattentive students will be dismissed from lecture and will lose participation points.
- Do not leave class early, and do not rustle papers or pack up bags in preparation for leaving before class is dismissed.
- Show up for class on time. If you must be late on a regular basis, please inform the instructor.
- Please do not eat or drink anything other than water in class.
- Be respectful in your interactions with your fellow students and your instructor, whether in person or in cyberspace.
**Grading Policy:** You are responsible for monitoring the accuracy of your grades on the course website. Notify the instructor promptly if you notice a mistake in the grade book so that it can be corrected in a timely manner.

If you believe that an assignment was graded incorrectly, you may request a one-time re-grade from the instructor. Understand that the entire assignment will be re-evaluated, and the instructor may correct your grade up or down.

**Late Work:** Observing reports should be turned in by the end of class on their respective due dates. If not turned in during class, students must turn in assignments to the professor’s mailbox (preferred) or office before 5 pm. All assignments turned in after 5 pm on their respective due dates will be assessed a 25% penalty per day (including weekends and university holidays).

**Late Registration:** Students entering the class within the late-add period are responsible for all material covered since the first day of instruction. Missed assignments that were due before a student’s official registration must be completed within one week of their official add date, or no credit will be given. Assignments due on or after the official add date will not be granted extensions.

**Exam Absences:** Make-up exams will only be offered if the student has good reason, in accordance with sections 1-501, 1-502, and 3-201–3-204 of the *Student Code*. Advance notice and documentation are required for approved school events (e.g., athletic competition), religious observances, and other planned absences. In the case of unforeseen circumstances (e.g., illness), make-up exams may be granted at the discretion of the instructor if appropriate documentation is provided. Make-up exams must be taken within one week of the original exam date.

**Personal Issues:** To insure that concerns are properly addressed from the beginning, students who require reasonable accommodations to participate in this class are asked to see the instructor as soon as possible. All accommodations will follow the procedures as stated in sections 1-107 and 1-110 of the *Student Code*.

**Academic Integrity:** Any instance of academic dishonesty (including cheating and plagiarism) will be handled in accordance with sections 1-401–1-406 of the *Student Code*.

**Working With Others:** Discussing course material with your classmates is encouraged, but each student is expected to do his/her own work.

- For homework and most discussion activities you may work together and discuss the questions, but each student should write up and submit their own answers.
- Some discussion activities might be designated as group work. For such assignments, you may work in groups (of up to three people per group) and turn
in a single assignment for the whole group. Each student is responsible for understanding and participating in the exercises.

• For the planetarium and observing sessions, you may attend the events with friends, but one person cannot attend “for the group.” Each student must write and submit his/her own report.

• If you are in any doubt about whether something is allowed or not, ask your instructor.