ASTR 121 – The Solar System
Spring 2016 Syllabus

Teaching Staff

<table>
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<th>Professor</th>
<th>Teaching Assistants</th>
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<td>Name</td>
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<tbody>
<tr>
<td>Samantha Thrush</td>
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Tutoring Hours

- Mondays, 12 – 3 pm, 132 Astronomy (Thrush/Wavle)
- Thursdays, 2:15 – 5 pm, 125 Astronomy (Hardegree-Ullman)

Course Information

Lecture (CRN 30832): TR, 1:00-1:50 pm, 213 Gregory Hall

Discussion Sections:
- AD1 (Wavle): F, 9:00-9:50 am, 312 David Kinley Hall
- AD2 (Wavle): F, 10:00-10:50 am, 312 David Kinley Hall
- AD3 (Wavle): F, 11:00-11:50 am, 312 David Kinley Hall
- AD4 (Thrush): F, 12:00-12:50 pm, 312 David Kinley Hall
- AD5 (Thrush): F, 1:00-1:50 pm, 312 David Kinley Hall
- AD6 (Thrush): F, 2:00-2:50 pm, 312 David Kinley Hall
- AD8 (Hardegree-Ullman): F, 2:00-2:50 pm, 134 Astronomy

Credit: 3 credit hours. This course satisfies the General Education Criteria for a Physical Sciences (Natural Sciences and Technology) course and a Quantitative Reasoning II Course. Credit is not given to students with credit in ASTR 100, ASTR 210, or GEOL 116. Students with credit in PHYS 212 are encouraged to take ASTR 210.

Prerequisites: None.

Course Description

ASTR 121 is one of two semester-long courses in astronomy. In this course we will survey our current understanding of the solar system by retracing how humans came to understand the motions and properties of celestial bodies. The complementary course ASTR 122 (which does not require ASTR 121) explores our understanding of the structure and evolution of stars and galaxies and current scientific theories concerning the history of the universe.
Learning Objectives

• Understand the daily and longer-term motions of the stars, Sun, Moon, and planets.
• Understand the major contributions of Copernicus, Kepler, Galileo, and Newton to our understanding of the universe.
• Demonstrate an understanding of the methods of science.
• Know how astronomers study the properties of objects in our solar system.
• Know the basic physical and dynamical properties of the planets and their satellites.
• Know the properties of small solar system objects: asteroids, comets, and meteoroids.
• Have some basic knowledge of our star: the Sun.

Course Resources

Textbook: Universe: The Solar System, 5th edition, by Freedman, Geller, & Kaufmann. Used textbooks, electronic versions, or earlier edition copies should be sufficient; additionally, copies of the course textbook are on reserve at Grainger Library.

(This textbook is an abridged version that only contains chapters related to the solar system. If you would like the full textbook which includes chapters on stars and galaxies as well, the most recent edition is Universe, 10th edition, by Freedman, Geller, & Kaufmann.)

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

Calculator: A scientific calculator will suffice, but graphing calculators are allowed as well. The best models are able to display an entire equation as you enter it.

Course Webpage: Located at (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:

Excellent  A: 90-96.99%  A+: 97-100%
Good       B: 80-86.99%  B+: 87-89.99%
Average    C: 70-76.99%  C+: 77-79.99%
Deficient  D: 60-66.99%  D+: 67-69.99%
Failing    F: 0-56.99%

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

Grade Components  Percentage of Overall Grade:
Exams               30%
Homework            30%
Observing Reports   15%
Discussion Activities 15%
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, or short answer questions in addition to problem solving.

You may bring one 3” x 5” note card to each exam. You must bring your official university identification card (to show upon request) and a calculator and to each exam. Phones may NOT be used as calculators on exams. Calculators may NOT be shared during exams.

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 other week and will consist of problem solving and short essay questions. These must be turned in online via the course website.

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.
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.

Discussion Activities: Most assignments given in discussion sections are to be completed and turned in before the end of class. Certain lab assignments (noted on the schedule) will be started in discussion, then due one week later at the following session. Attendance will be taken at the beginning of discussion, and discussion points will be docked for late arrival.

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 121.

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 reevaluated, and the instructor may correct your grade up or down.

Late Work: Observing reports and extended discussion activities 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. Online homework, observing reports or extended discussion activities turned after this time will be assessed a 25% penalty per day (including weekends and university holidays). Regular discussion activities will not be accepted late.

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.

Discussion Absences: Regular discussion activities due at the end of class cannot be turned in late. Students who will miss discussion for approved school events, religious observances, and other planned absences may request activities from the instructor (not teaching assistants) in advance if appropriate documentation is provided. Such assignments should be completed ahead of time, as their due dates will not be extended.

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.