## Astronomy 171 –Solar System Astronomy Winter Quarter 2007 Syllabus

Lectures: MTWRF, 9:30-10:18am, 0050 Scott Laboratory (SO 0050)

**Professor:** Paul Martini

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**Recommended Textbook:** *Universe* (7th Edition), by Roger A. Freedman & William J. Kauffmann. This textbook is recommended for both Astronomy 171 and 172. There is also a shorter (and slightly less expensive) volume entitled *Universe: The Solar System* (2nd Edition) by the same authors that contains only the material for Astronomy 171. If you plan to take both Astronomy 171 and 172, you may find it more economical to purchase the larger *Universe*.

#### **Course Web Page:**

http://www.astronomy.ohio-state.edu/~martini/Astro171/index.html

## **Course Objectives**

Astronomy 171 is a Physical Science Course in the Natural Science category of the General Education Curriculum. Courses in this category are intended to meet several or all of the following:

#### Goals:

Courses in natural sciences foster an understanding of the principles, theories, and methods of modern science, the relationship between science and technology, and the effects of science and technology on the environment.

Learning Objectives:

- 1. Understand the basic facts, principles, theories, and methods of modern science.
- 2. Learn key events in the history of science.
- 3. Discover examples of the inter-dependence of scientific and technological developments.
- 4. Discuss social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

In Astronomy 171 we will meet these goals and objectives through the study of astronomy, with an emphasis on the solar system. The course will begin with a study of how simple observations and measurements can be used to understand the world around us, such as the origin of the seasons and the phases of the moon. Along the way we will introduce basic physics concepts to understand astronomical observations as well as use these observations to understand physics and scientific theories. The second half of the course will concentrate on modern solar system astronomy. Here the emphasis will be on what we know about the constituents of the solar system, most notably the planets,

and how these discoveries were made. We will conclude the course with a study of planets around other stars and the prospects for life on other planets.

### **Homework Assignments**

There will be five (5) homework assignments during the quarter, each consisting of set of short answer or multiple-choice questions. The questions are open-book, open-notes, open-discussion. Homework will be due on the following Fridays:

Homework 1: Friday, January 12 Homework 2: Friday, January 26 Homework 3: Friday, February 9 Homework 4: Friday, February 23 Homework 5: Friday, March 9

Collectively the homework will count for 25% of your grade. The questions on the homework will generally be more challenging than those on the quizzes. They are designed to get you thinking about the course topics in an active way. I strongly encourage you to form study groups to discuss the questions, though you must decide on the final answers yourself.

Homework is due <u>in class</u> on the due date and no late homework will be accepted, except for legitimate, documented emergencies.

## **In-Class Quizzes**

There will be four (4) in-class quizzes, scheduled for the following Fridays:

In-Class Quiz 1: Friday, January 19 In-Class Quiz 2: Friday, February 2 In-Class Quiz 3: Friday, February 16 In-Class Quiz 4: Friday, March 2

Your three highest quiz grades will count for 45% of your grade; I will drop your lowest quiz score. The quizzes will cover the material in the lectures and readings since the previous quiz. All of the quizzes are **closed-book**, **closed-notes multiple-choice** tests. You only need to bring a #2 pencil for the quiz.

Please mark your calendars with the quiz dates. The quizzes will be held at the normal class time and you will have the entire class period to complete the quiz. **Makeup quizzes are only offered by advance arrangement with the professor.** Exceptions are for legitimate, documented emergencies and require no advance notice. If you will be away on an official University-sponsored activity (e.g., sports teams, band, etc.), you must bring me a letter from your coach, director, etc. **in advance** of the quiz. Quizzes must be made up by the Wednesday after the missed quiz, otherwise that quiz becomes the one that I will drop in computing your final grade.

## **Final Exam**

The Final Exam will be on **Tuesday, March 13 from 9:30-11:18am in 0050 Scott Laboratory**. Attendance at the Final Exam is mandatory. You only need to bring a #2 pencil for the final.

The final will be **comprehensive**, covering all lectures, and has the same multiple-choice format as the in-class quizzes, only it will be twice as long. It is worth **30%** of your grade.

**No makeup final will be offered.** If you miss the final exam, you will be given an incomplete (I) with an alternative grade equal to getting a zero on the final, and have to make it up during Spring Quarter 2007 to avoid the alternative grade.

In keeping with official University policy, early finals will **not** be available for those persons who wish to depart early for the break. Please plan ahead and make your travel plans accordingly.

# **Grading Policy**

- The 5 homework assignments will collectively account for **25%** of your grade.
- I will drop the lowest score of the 4 in-class quizzes, and use the scores on the 3 remaining quizzes to compute your grade. Together, these in-class quizzes count for **45%** of your grade.
- The final exam will be cumulative, covering all material from the class. It accounts for **30%** of your grade, and must be taken by all students.
- All grading, homework and exams, is done on a standard C+ curve. This means the median grade in the class will approximately correspond to a C+.
- Class attendance and participation will factor into the determination of your final grade.

## Lectures and Attendance

Lectures will be daily, 9:30-10:18am, in 0050 Scott Laboratory. The daily lectures are your primary resource for this course. We will not cover all of the topics in the book and I will supplement the book with additional material that is not covered in the book. Outlines of each lecture will be available via the class website. These outlines are intended to be useful aids for studying and following along in class. I recommend that you print out the outlines, bring them to class, and take notes in the margins. Remember, these are only *outlines* of what I cover each day in class, not comprehensive transcripts of the lectures. In particular, I will show many images and animations during class that will not be available on the class website. Because of the importance of the lectures, I will also take attendance on a semiregular basis and consider both attendance and class participation in the determination of your final grade.

## Related Readings in Universe

Because introductory astronomy textbooks designed for non-majors are rarely organized exactly the same as our courses, we will not strictly follow the order of topics in the book. You can expect to jump around some as the course progresses. As such, instead of specific reading assignments, each section of the course will have reading *suggestions* listed on the class website. However, not all topics in this course are covered by the book, and similarly not all topics covered in the book will be discussed in class. You are only responsible for the contents of my lectures.

## **Students with Disabilities**

Any student who feels that he or she may need an accommodation based on the impact of a disability should contact Professor Martini to discuss their specific needs. We will rely on the Office of Disability Services at OSU to verify the need for accommodation and to help develop the appropriate strategies. Students with disabilities who have not previously contacted ODS are encouraged to do so by visiting the ODS website (www.ods.ohio-state.edu) and requesting an appointment.

## Academic Misconduct

All OSU professors are required to report suspected cases of academic misconduct to the Committee on Academic Misconduct. See the University's Code of Student Conduct for details. The most common forms of misconduct in classes such as this one is copying from another student's exam. All cases will be investigated following University guidelines.

## **Classroom Etiquette**

To help establish and maintain a courteous, distraction-free learning environment in our classroom, I ask that all students please observe the following basic rules of behavior during lectures and exams:

### Use of cell phones and pagers is prohibited.

This includes using cell phones for instant messaging, email, web, pictures, etc. When in class, all cell phones and pagers must be **turned off** (i.e., not in a standby or "silent ring" mode).

### Use of laptops and networked devices is prohibited.

Surfing the web, instant messaging, reading email, or typing notes on a keyboard during class is very distracting to those around you. When in class, all laptop computers and networked devices (e.g., PDAs) must be turned off and put away. The only exceptions are approved devices for enhancing sound or vision for the hearing/vision impaired.

### Please do not start packing up until class is completely over

Nothing is more rude or distracting than the noise of notebooks closing and jackets and backpacks rustling while the professor is trying to finish up. I'll be very clear when we're done, and I work very hard to stay on time, so please wait until I get to the end.

#### If you come late or have to leave early, please sit near the back of the room.

This will make your late arrival or early departure less disruptive for your fellow students.

#### No conversing during lectures.

Please respect your fellow students and do not carry on conversations during class.

Your cooperation in observing these rules is greatly appreciated.