Astronomy 121: The Formation and Evolution of the Solar System

Administrative:

Syllabus
Frequently Asked Questions about AST121
Schombert's Schedule
Academic Calendar

Math Anxiety
What to Study?
Why Big Lecture Classes?
Academic Learning Services

Internet Resources:

The Nine Planets
Meteor Showers
Views of the Solar System

Periodic Table
Temperature Scale

Solar System Symbols
What's in the Sky this Month?
Planetary Fact Sheets

Greek Alphabet
Exponents and Logarithms

21st Century Science
Astronomy/Physics Glossary

AST122: Birth and Death of Stars
AST123: Galaxies and Cosmology

Lectures:

Week 1:  
1. Introduction
2. History

Week 6:  
15. Terrestrial Planet Geology
16. Terrestrial Planet Interiors
3. Celestial Sphere
4. Orbits
5. Gravity
6. Light
7. Matter
8. Solar System Review
   Jan 20: Exam #1
9. Earth

Week 3:
10. Moon/Mercury
11. Venus
12. Mars
13. Galilean Satellites
14. Terrestrial Planet Atmospheres

Week 5:
17. Moons
   Feb 15: Exam #2
18. Asteroids/Comets

Week 7:
19. Jupiter
20. Saturn
21. Outer SS

Week 8:
22. Interior Sun
23. Exterior Sun

Week 9:
24. Origin of the Solar System
25. Primordial Life
   Mar 10: Exam #3

SafariX Textbook Online

Quiz Deadlines:

Quiz #01/Lecture #01 - Jan 09
Quiz #02/Lecture #02 - Jan 09
Quiz #03/Lecture #03 - Jan 09
Quiz #04/Lecture #04 - Jan 16
Quiz #05/Lecture #05 - Jan 16
Quiz #06/Lecture #06 - Jan 16
Quiz #07/Lecture #07 - Jan 19
Quiz #08/Lecture #08 - Jan 19
Quiz #09/Lecture #09 - Jan 30
Quiz #10/Lecture #10 - Jan 30
Quiz #11/Lecture #11 - Jan 30
Quiz #12/Lecture #12 - Feb 06
Quiz #13/Lecture #13 - Feb 06
Quiz #14/Lecture #14 - Feb 06

Quiz #15/Lecture #15 - Feb 13
Quiz #16/Lecture #16 - Feb 13
Quiz #17/Lecture #17 - Feb 13
Quiz #18/Lecture #18 - Feb 20
Quiz #19/Lecture #19 - Feb 20
Quiz #20/Lecture #20 - Feb 20
Quiz #21/Lecture #21 - Feb 27
Quiz #22/Lecture #22 - Feb 27
Quiz #23/Lecture #23 - Feb 27
Quiz #24/Lecture #24 - Mar 09
Quiz #25/Lecture #25 - Mar 09

Quiz Instructions
All work must be completed by midnight

Exam and Quiz Scores:

What is my current grade?

Class Discussion Page

The graphic in the background of these pages is from a chart in Johannes Kepler's 1606 celestial atlas entitled De Stella Nova.

Copyright Information
Astronomy 121
The Solar System

Winter Quarter 2005

Prof. Jim Schombert
Office: 461 Willamette, 6-5214
Office Hours: 9-10am MWF (or check my schedule and drop in during a blank time)
email: js@abyss.uoregon.edu

Course Content:

The past 20 years has seen an explosion in our understanding of the contents, formation and evolution of the Solar System, mainly due to numerous NASA missions/probes to 8 of the 9 planets. The study of the characteristics of the other planets has provided tremendous insight into the understanding of how our own planet (Earth) operates and changes under Man's influence. The purpose of this course is to educate you on the basic science behind our exploration of the Solar System so you may make informed choices as future/current voters on issues of our environment and the future of science in this country.

The specific goals of this class are to:

- To gain an understanding of basic science that underlies Astronomy (the forum is the exploration of our Solar System).
- To explore the properties of the objects that make up our Solar System.
- To achieve an understanding of how the evolution of other planets has an impact on how we make choices to manage our own environment.

Course Organization:

All lectures in this course will be delivered electronically. The lecture pages will be on the Web in HTML (hypertext mark-up language) format so that they are accessible from any computer, either at home or on campus. The address for this course is abyss.uoregon.edu/~js/ast121.

We are using the computer network in this class for several reasons:

- This is the future; network literacy is the key to being employed.
- Since the course material is always available, there is less of a need to scramble to take notes during class. You can focus on paying attention.
- There is lots of material out there on the Internet which is relevant for this class.

Even though the web notes reduce the dependence on a textbook, they do not replace your need to attend class. A great deal of material is discussed in lecture that is not in the web notes and will appear on the exams. And difficult concepts in the web lectures, and math problems, will be clarified in class. So please attend.

Use the email system. Often professors only hear from students through office hours, and those students are usually the ones having trouble in the course. When you study or review your notes, send me questions by email. Also email me suggestions and comments about the course, particularly in the first few weeks in order to have an impact during the term.

In addition, there is a class discussion page, which gets a lot of traffic on the days before the exams. I will monitor the feedback and answer questions as they arise.
Grading:

Grading will consist of the following:

- Three exams worth 2/3 of your grade (held in class)
- On-line quizzes at the end of every lecture worth 1/3 of your grade

The three exams are large, difficult multiple choice exams. Each exam covers 1/3 of the course. The exams are designed using material from the lectures, so mastery of both is required for a good grade. Not taking an exam will automatically fail you from the course.

It is very useful not to wait till the last minute to study for an exam. If you miss an exam due to illness you must contact me as soon as possible after the exam. Missing an exam for a good reason usually means an oral make-up exam (these are torture, so you want to avoid missing an exam at all costs).

Notice there is no final exam during final exam week. The three exams taking during the class time consist of all the exams towards your grade.

numbers refer to percentage of students below curve point

i.e. 8% of the class will have scores between A- and A
Your grade will be based on the sum of the quiz and exam scores using the above curve. Note: you must maintain an average of greater, or equal, to 30% on the exams to pass the course. For example, if you score a 28, 31 and 31 on the exams, you will pass (barely). But, a 29, 29 and 31 will fail you.

**On-line Quizzes:**

In order to get you to engage the lectures, the class has a quiz at the end of each web lecture. At the bottom of each lecture you will find a "quiz" button. Hit it and take a quiz of 10 questions. You can restart a quiz and any point, take it with open book, notes or web pages.

These quiz questions count the same as an exam question. Your final grade will be based on the exam scores plus quiz scores. Not doing the quizzes will be the same as not taking an exam and subject to a failing grade. You will find that the quiz material comes from the web lectures and things discussed in class.

NOTE, you have only a limited window to take the quiz, the schedule is posted on the class web page (typically you have a few days after the lecture). Miss the date and you will be unable to take the quiz (the point of the quizzes is to get you to study before the night of the exams, hence the deadline). The quiz answers and scores are posted after the deadline. For this reason you cannot submit your quiz answers late. The answers are posted and late submission will not be allowed regardless of the excuse.

Due to the large number of quizzes, it is highly likely that you will miss a quiz deadline or your dog will eat the internet the night before they are due. Thus, each student will be allowed to drop the three lowest quiz scores for the final grade. If you miss three quizzes, then those three zeros are dropped. If you answer all the quizzes on time, then your three lowest scores will be dropped. If you miss more than six quizzes you will be dropped one letter grade per group of three that you miss.

To summarize:

1. Quizzes are on-line and mandatory
2. The deadlines are posted on the main web page
3. Answers and scores are posted immediately after the deadline
4. No late quizzes will be accepted, none, zip, zero
5. You can drop your lowest three quiz scores (these might be the three you missed and got zeros)
6. Miss more than six and you will be dropped a letter grade per three you miss

**Textbook:**

Some students are uncomfortable with a pure web-based course and would prefer a textbook to study. The textbook for this class is Chaisson&McMillan. This book is also available online (and cheaper) at SafariX Textbook Online. The reading assignments are:

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<tr>
<th>Lecture</th>
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<tr>
<td>Lectures 1-3</td>
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<td>Lectures 4-5</td>
<td>Chapters 3-4</td>
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<td>Chapters 13&amp;16</td>
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<td>Lectures 24-25</td>
<td>Chapters 15&amp;28</td>
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**Academic Honesty:**
A recent survey of UOregon upperclassmen has indicated that 91% admit to cheating on a written assignment or exam. Every effort will be made in this class to deter dishonesty through classroom procedures. It is degrading to impose draconian security measures to enforce honesty. Instead, we will use the honor system in this course and allow each of you to uphold your personal standards of conduct. For those of you who have failed to develop your own ethics, the University has designed the Student Conduct Program.

The rule is simple for this class. If you are caught looking on someone else's exam, using notes, etc., you will be flunked from the course.

Accommodations:

If you have a documented disability and anticipate needing accommodations in this course, please see me as soon as possible. And please request that the Counselor for Students with Disabilities (H. Gerdes, hgerdes@oregon) send a letter verifying your disability.