Astronomy 121: The Solar System

Welcome!

Hi - If you are new to this class, read the syllabus (this page), buy an iclicker and register it. All of the readings are online and free (see below for details). The important dates to know are midterms and final. **You must be here for the final and for at least one of the two midterms.**

**Midterm 1: October 26th**

**Midterm 2: November 21st NOTE! Monday of Thanksgiving week**

**Final: Dec 5th**

*These dates are immutable so please don't email me about rescheduling a test for you unless you have official UofO reasons (sports, band, etc). Again see below for all policies. Other than that, see you in class.*

Instructor: **Dr. Elsa Johnson**

http://pages.uoregon.edu/elsa/index.html

Email: elsa@uoregon.edu

Office Hours: 3:30-5pm Wed in Willamette 177.

Lecture: Monday, Wednesday, Friday from 2-2:50pm in McKenzie 240A

Required Materials:

1. IClicker - please register!!

Pre-requisites: None.
Introduction

Welcome to Astronomy 121, a course designed for non science majors. There is no textbook for this course. All reading materials will be freely accessible online and located here: Readings. We will explore the current discoveries happening in our Solar System, the upcoming total solar eclipse and the multitude of new exoplanets discovered. We will also discuss some basic physics relationships that are necessary in order to understand how we pull information, such as mass and composition of planets, from the data. Here is my advice for getting the most out of this course:

- Go to lecture and take notes
- Do the homework and all assigned tasks on time.
- Ask (relevant) questions during lecture if you have them.
- Make at least one friend in class to discuss concepts and for note taking if you miss lecture
- Give me feedback (email or office hours) if you are confused with a topic previously discussed.
- Always bring your iclicker to lecture!
- Again, go to lecture! The most successful students in previous courses went to most, if not all, of the lectures.

Grading

- 4 homework assignments 24%
- Online Journal 9%
- Astronomy activity 8%
- Clicker questions/attendance 10%
- Best score of 2 midterms 22%
- Final 27%

If the median grade, which means of class grades drops below C+/B- (79%) I will curve the grades. The curve will be applied to your cumulative score and not to individual tests, homeworks, etc. Typically the average for the tests is much lower than the homework. In the end, they balance out.
Course Policies PLEASE READ!!!

Email: 1) Read the syllabus first if your question pertains to grading or dates 2) Use common sense. I'm not going to deal with email after 9pm or before 9am. On fridays this will be from 4pm onward, so if you have a burning question that needs to be addressed immediately, don't send it at these times or just don't expect a response until the next day.

Extra Credit: There is no extra credit for this class.

Late Policy: Late homework is accepted up to the minute before the next lecture but loses 10% of the total assignment points for each day the homework is overdue, and yes this includes non-lecture days and weekends. For example if it is due on a Tuesday and you turn it on Wednesday at 1:59pm you will lose 10% in points. If you submit it in at 2:01pm you will get a zero, even if you are not present in class.

Test make ups: You can't make up a test due to vacation, cold, etc. due to the number of students in this class and potential number of rescheduled test times. However, you are graded on the best of two tests so don't worry. If you have a U of O related duty (sports, band, etc) and the relevant documentation you can make up a test. If you have been extremely ill beyond your average cold or flu, please come talk to me or email me. If you can't make either test due to other foreseen conflicts then you should reconsider taking the course.

Redos: There are no redos for any homework or test for more points. However you should redo your homework and tests to prepare for the final.

Laptops/phones/Distractions: If you are distracting me because you are either talking, texting or watching videos on your computer, I will let you know and ask you to stop or leave. They are a major source of distraction for you and everyone around you unless you are using them for lecture. I hate texting and surfing on phones as well. If you need to text, do it as discretely as possible. If someone is bugging you with aforementioned items, I support you telling them to stop it. I can't police every person in the class and I shouldn't have to because this is college and you're all adults who are responsible for your own academic success.

Final Test Date: The test will be offered at the scheduled time (McKenzie 240A; 2:45pm Monday 12/5/2016). You can't take it earlier or later, so make your vacation/work plans accordingly. According to school policy, if you have more than 3 (read 4) finals in one day you can reschedule the final. If this is the case for you, and
you asked your other professors first and you have proof of having 4 finals (copy of transcript or schedule) then I will reschedule the test for you only.

**Responsibility:** You are responsible for monitoring your grades. If you don't see a grade for an assignment you submitted, you must let me know ASAP.

**Academic Honesty**

- **Copying:** Homework is to be done on an individual basis. You are free to study and discuss with someone, but if you and your study partner have identical answers or even just switch a few words or sentences around, this is considered copying and each results in zero credit for all similar answers. Even in a class this size, it is easy to catch so don't do it! I am brutal about this.

- **Cheating:** If you are caught cheating looking at your neighbor's test or with notes either on your phone, any electronic device, a piece of paper, hat, arm, water bottle or whatever, you get an automatic 0 on the test. Therefore, no headphones, sunglasses, or phones during test time. If I suspect you looking at your neighbor's test, I will ask you to move.

- **Avoiding Plagiarism:** Don't cut and paste text from sources to answer questions - even if you use quotes and cite sources. Quotes are never used in science papers unless it's a book about a scientist. If you cut and paste test, change a few words and don't cite sources this is considered plagiarism and very very bad! Some professors make it a mission to go after students by notifying administrators and professors of the suspected plagiarist.

You may be asked to go look up information on other websites to answer certain questions. Again, you are to respond to these questions by writing the answer in your own words. **Do cite sources (a link to the website is just fine), but don't use quotes from the articles to answer the question.**

**Readings** I have selected MANY webpages and videos for course material. However, we probably won't get thru all of them. I will post a reading schedule on the canvas calendar so you know what to read and when. Go to this page for the reading list: Readings.

**Midterms and Final**

All tests will cover material discussed in lecture and in the homework. In other words, you will not be tested on some arcane fact from one of the readings unless we talked about it in lecture or it was on the homework. The midterms will be a blend of multiple
choice, true/false, matching and short answer style. The final will be a similar format but longer and cumulative. There is the possibility of longer answer questions as well.

**Midterms**

You will be given 2 midterms- one **during week 5 (10/26) and one during week 9 (11/21)**. Your midterm grade will be based on the highest grade of either test. Since it is the best grade out of two midterms you are only required to take one. However, I strongly encourage you to take both unless you really don't have time to study for one of them. The reason for "best of two" exams is that I don't give make up exams unless there is an extreme reason (see above) and my make up exams tend to be hard compared to the in class midterm.

The second midterm may slightly overlap with material from the first midterm. I'll let you know which material will be relevant.

**Final**

The final will be in class in Mckenzie Hall room 240A at **2:45pm, Monday December 5th**.

**iClickers and Attendance**

**Attendance is graded through iclickers.** Each lecture will have questions for you to answer spread throughout the 50 minute period. This way you can interact with the material as you learn it. You are graded on effort and answering the questions, but not on having the correct answer. **You must answer 75% of the questions in order to get participation credit! Thus you should be present for the entire lecture.**

You will be graded on 20 max attendances. That means you have to be in class 20 times (not including the test days and Thanksgiving vacation) to receive the full 10% participation credit. Easy. You have at least six days to miss lecture for whatever reason. Ideally, be here for all of them unless you're sick - then please stay home and rest. In fact keep these "miss" days reserved for illness or some last minute emergency. Basically, think ahead and don't skip just because you don't feel like going to class. Illness and injuries extending for several lecture days are not exempt. In other words, you will still be expected to attend a full 20 lectures if you want the full participation credit. Jobs, interviews, vacations, transportation issues, family emergencies, or if you signed up for this course late are also not valid excuses. If any of the above happen (inevitably some will), you don't have to tell me or provide any excuse. Just come back to class as soon as you can.
The only exceptions for missing lectures are official UofO activities like sports, band, etc. You must give me the signed relevant forms from your coaches/advisors etc. I will give you participation credit for lectures days missed due to the activity. If the campus is closed due to snow/ice/some other reason on lecture day, then I will reduce the number of required attendances to 19 or how ever many snow days occur on a lecture day. If you have a debilitating medical condition or mobility issues that make it difficult for you to attend lecture, I can restructure your grade such that it is based on midterm score, final, homework, project and journal only. You must let me know ASAP if this is something that would work best for you. Again I won't do this if your extended absence is due to vacation, work schedule, etc.

**Homework**

You will have 4 assignments each weighted equally. Assignments will be electronically submitted via canvas using a quiz interface and instructions for each will be posted under each assignment group. Possibly some homework may involve using an online simulation. **You must turn in your own work!! No group assignments - otherwise you will be penalized for copying** and you don't want that. See policies in the blue box above for late homework and expectations. I go over solutions the following lecture after the due date.

**Class Project**

You will complete one project due the Monday on the 10th week of classes. See this page [Course Project](#) or click on 'Pages' in the side menu for details.

**Online Journal**

This was inspired by many students asking me how to study for this and similar courses. I always tell them to summarize their notes and go over them on a regular basis. So as an incentive for doing this, you will be graded on summarizing your notes. Every week you will submit a at least a paragraph summary of what you learned for that week. Each submission is due **Saturday** at noon except for the first week which is due Saturday of the following week. I will be lightly scanning these for content so don't put anything inappropriate or not related to this class because doing so will result in a 0 for that week. If you have questions that arise as you write (this is a good thing), be sure to ask me via email instead of just in the journal because I probably will miss them. This online journal is for your benefit - please take advantage of it as a study resource! Each journal entry is worth 3 points, 1 for each lecture day. If you are gone for a lecture, you can always summarize the posted lecture notes and readings. Thus if you only cover topics that were discussed for 1 lecture, you will only get 1 point. You can submit multiple times but you will be graded on only one submission, the last one before the
due date. I also suggest you keep a copy of your journal on your local computer in case Canvas decides to crash.

**Lecture notes**

I post all lecture notes in canvas. They will be located under 'Files' on the side menu. If I'm feeling ambitious I'll link them in the calendar.

**Canvas Interface and Grades**

Canvas has many good features but also some very annoying ones. It is good because it consolidates all of the class work into one handy site. The downside is the way it handles the gradebook. The way Canvas calculates the total grade can and has been totally misleading. For that reason I am "muting" (their words not mine) the total grade for the course. You will be able to see individual grades and percentages but you won't see your total grade. If I have the time I will put a grade calculator on this site. But a good general rule of thumb is that if you are doing over 80% on all of work, then you are doing the same in the class. I will also mute the homework assignment grades until the next lecture after they are due. If this doesn't make sense, don't worry about it for now.

**Math**

I am going to keep math at a very, very (5th grade) basic level. You just can't avoid math and graphs in astronomy it is impossible. Astronomy for professional astronomers is all about data, which means graphs and math. You measure light from stars in different wavelengths, graph the data, do some statistics and the data will tell you something new and interesting (or sometimes it's inconclusive). Math for this course is to explain physical phenomena. Given the huge diversity of objects and their physical motions in the Solar System and beyond, there are only a few elegant physics principles that explain their composition and motion. You will see these physical principles in the form of equations in class. HOWEVER you will not be tested or given homework on any multistep calculation involving a calculator. Instead we will focus more on how one quantity relates to the other. I can't guarantee absolutely no math, but I promise to keep it super light and doable. If you want a hint of the difficulty, just know how exponents work like $2^3 = 8$ and simple fraction multiplication and division like $1/2 * 1/2 = 1/4$ or $1/(1/12) = 12$.

**Help**

Unfortunately, we don't have any astronomy graduate TAs at this time, so astronomy help is limited to my office hours (and email if you can't make the office hours). I'll send out emails and announcements if many are confused on the same topic.
Accessible Education Center

If you need special accommodation for tests, homework, etc please contact the Accessible Education Center ASAP! They provide documentation that helps me determine what works best for each individual. Plus please talk to me if something works for you not mentioned on the forms from AEC. If you need extra time for an assignment I can give it to you provided you have the documentation.

Final Note from yours truly:

If you are having problems keeping up with the work- please see me, talk to me, tell me what's going on. Maybe I can help or at least point you in the right direction for help. I was an undergraduate once and I remember the fun, the drama, the workload, the stress. I will help you get on track in this class provided you are helping yourself to get back on track too. This is never stated enough, but the real way to learn something new is to accept that struggle and failure are a part of the process. Seriously. We do this so much in physics whether it's calculations or taking data or programming that you know your first 10 or more trials are going to suck....And then you keep doing it until you get it right. That's how real life works. Our society focuses too much on the end product of awesome skills and forgets there was a struggle to get there. So don't give up!

I really want you to get something positive from the course - whether it's one topic that totally captures your imagination or just a general appreciation and new perspective of our place in the Universe. Let's make this a great term!

I'll leave you with my favorite quote from JFK's historic Moon speech at Rice University.

https://www.youtube.com/watch?v=6z1DidIdxUo