



ASTR 121 – The Solar System

WINTER 2018, CRN 21582

CLASS MEETING TIME

Tuesday, Thursday 2:00 – 3:50 PM

Lawrence Hall, Room 115

MY CONTACT INFORMATION

Dr. R. Scott Fisher

Willamette Hall, Room 145

rsf@uoregon.edu

OFFICE HOURS

Monday, Tuesday, Wednesday, Friday 11:00 am – 12:00 pm

Friday 1:00 pm – 3:00 pm

Please make an appointment for a guaranteed meeting!

REQUIRED TEXT

We will be using a free open source Astronomy text from Openstax. The online and PDF versions of the textbook can be found at this link:

<https://openstax.org/details/books/astronomy>

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Astronomy

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Astronomy is designed to meet the scope and sequence requirements of one- or two-semester introductory astronomy courses. The book begins with relevant scientific fundamentals and progresses through an exploration of the solar system, stars, galaxies, and cosmology. The Astronomy textbook builds student understanding through the use of relevant analogies, clear and non-technical explanations, and rich illustrations. Mathematics is included in a flexible manner to meet the needs of individual instructors.

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INTRODUCTION

The goal of this course is to give you knowledge about the Universe we inhabit and in particular a conceptual understanding of basic astronomical topics. We begin by considering the Universe that we see with our naked eyes — for example, the appearance of the night sky and the phases of the moon. We also ask basic questions like “What is the place of the Earth in the Universe?” and “How can I understand the astronomy I encounter in my life?” Answers to those questions give us the perspective needed to deeply appreciate the physical world we live in and to start to understand the vast scales of time and distance of the Universe itself. At the same time, we develop an appreciation for the tools and concepts used by astronomers that form the practical basis for their work. These tools are both broad, such as the so-called Scientific Method, and specific, such as those used to determine the sizes and compositions of stars and planets.

We will then delve into the science of modern observational astronomy, with an emphasis on how the largest telescopes in the world operate. Once we learn about the facilities, we will investigate how they are used to study the cosmos.

The course uses the text as a complement to the information covered in the class lectures. We will also use several on-line resources in our class. Along with learning how to use these services, we will develop ways to help determine if astronomy information you encounter in day-to-day life is truthful or a fabrication.

The lectures form the core of the class. I will often suggest readings in the book or on-line that give more detail and a deeper presentation of the material we cover in class together.

You should attend class and keep up with the readings. Experience shows that students who do well are those who attend class and are actively engaged in the learning process as a team with me.

The exam dates for the term are fixed and will be announced in class and on the class Canvas site. The date of the Final exam is set by the University and cannot be changed.

Generally, a class period will consist of me giving a lecture about the topic for the day. During my class lectures I will:

- Discuss important facts, figures, and problems relevant to the topic we are covering
- Highlight and explain difficult concepts related to the topic. We will be especially interested in top-level concepts that help form an overarching cosmic perspective

- Incorporate additional material into the lectures to connect the topic to modern astronomy and current research

LEARNING OUTCOMES

To give you an idea of what I want you to learn in our class, I've written the following learning outcomes:

- You will gain a “cosmic perspective” that will give you a true and accurate idea of the scale of the universe. This perspective will include a basic understanding of the relative and absolute size of astronomical objects as well as the age of the universe.
- You will learn to identify constellations, planets, and other objects in the sky and where to look for more information about them.
- You will gain an appreciation of modern astronomy and an understanding of how the biggest telescopes operate and what their limitations are with respect to discoveries.
- You will gain critical thinking skills in astronomy that will allow you to start to discern whether or not an image is real or “photoshopped”.
- You will gain astronomical knowledge that will allow you to form educated opinions about astronomy and space related topics that you encounter in the media.

GRADING

Your final grade will be made up of several components that will include; grades on exams, grades on homework assignments, and class engagement. There will also be multiple opportunities for extra credit. The most important thing to understand about how your grade is determined is this:

I do not give you a grade – I assess your performance in the class.

Ultimately, your grade will be determined by your performance in the class, not by me. The way I will assess your performance is through exams, homework, class participation, and extra-credit. Here are the components of your final grade:

- Homework – 25%
- Exam #1 – 15%
- Exam #2 – 25%
- Final Exam – 30%
- Class Participation/Engagement – 5%

Here are important notes about the grading scale:

- The weight of the exams increases as the term progresses. This is to allow you to become familiar with my testing style.
- The exams are **cumulative**.
- Anything that is said in class, displayed on slides, or discussed within reading assignments is testable.
- There are no scheduled makeup exams.
- The 'participation/engagement' category will include my personal assessment of your performance in the class.
- Extra credit opportunities will be clearly explained.
- These conditions are subject to change.

FREQUENTLY ASKED QUESTIONS

Q: Can I use my laptop in class?

A: Yes. There are no restrictions on laptops or tablets in class. The most important thing is to **MAKE SURE THEY ARE MUTED**. Interruptions of class due to poor electronics management are rude to both your classmates and to me. **This is a huge pet peeve of mine**, so be sure to silence your cell phone and mute the sound of your laptop.

Q: Do I need to buy the book?

A: The book **FREE** and it will be used throughout the term. Please access the online or PDF version of the text.

Q: Do you take attendance?

A: Sometimes. Attendance plays a role in your final grade, as it is part of "Class Engagement". It is difficult to assess performance if there is no performance to assess. The bottom line is, come to class.

Q: Can I turn in my homework late?

A: No. I will be very clear with homework deadlines.

Q: Will you curve the class grades?

A: No. Your grade is determined by how well you learn the class material.

Q: Will this class be awesome?

A: Not just awesome.... **astronomically** awesome.