

ASTR 4 – Solar System Astronomy

Fall 2022

Instructor: Caitlin Kepple (she/they)

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Office Location: S46A

Class days/times: T/R, 1:30-3:45 pm

Welcome to Solar System Astronomy! In this course, we will explore current and historical understandings of astronomy from a variety of perspectives. We will use real-world data to build knowledge and skills around astronomy as a science, while also interrogating the traditional view of science as an “objective” pursuit. We will draw on knowledge from several disciplines and cultures to help us understand the forces that shape our view of science as individuals and broadly in the US.

Course Texts

-*Astronomy*, by OpenStax (available in print for \$60 or as a free [PDF here](#))

-Selected readings available on Canvas each week

Important Dates

Oct 8: Last day to add classes

Oct 9: Last day to drop classes with no record

Nov 11: Veterans Day holiday (no classes)

Nov 18: Last Day to withdraw (“W”) from courses

Nov 24-27: Thanksgiving Holiday (no classes)

Dec 12-16: Final Exams

Inclusivity Statement

To give us a starting point for creating a welcoming classroom space, we will refer to the [Inclusive Astronomy Recommendations](#), and actively work to improve on the practices they recommend. To that end, we will center the experiences of historically marginalized groups in astronomy using an intersectional lens. We will draw on different ways of knowing and learning astronomy from Indigenous identities, women of color in astronomy, the LGBTQ+ community, and the disabled community. Because this is a non-exhaustive list of (historically) marginalized identities in astronomy, we will work as a class to further identify how we are maintaining internalized biases about scientific knowledge and what perspectives are being left out of the conversation.

Grade Breakdown

Grades are based on a combination of participation, homework assignments, in-class activities, and lab assignments that are described more below. The graded assignments are constructed and distributed so that folks can succeed in the class via a wide variety of methods to display their understanding.

The grade breakdown for the course will be:

Reading Notes/APOD Presentation - 15%

In-class activities/Attendance - 15%

Homework (8 total) - 40%

Quizzes (4 total, lowest dropped) and Final Exam - 30%

Late work policy: If you foresee a need to extend a due date for any assignment, *please email me as soon as you know you will need an extension* and we will come up with a timeline that is workable for the both of us.

Course Structure

Our course is designed so that everyone can construct their astronomy knowledge from the ground up and access the material with a variety of learning styles, starting with short in-class assignments before moving on to the synthesis projects.



Pre-synchronous work (reading and notes)

- You can find the assigned reading for each week on Canvas (note that it will likely change from the schedule below).
- As you complete the readings from the textbook, you will also need to complete a set of reading notes each week. These should be a place for you to write down all of the important concepts, definitions, formulas, etc. while you read. Reading notes should be done by class time at the beginning of the week. There will be both planned and unplanned notebook checks. (There is a template and example set of notes on Canvas)



APOD Presentations

- Early in the quarter, you'll sign up to do a short presentation of an Astronomy Picture of the Day or "APOD" image of your choosing. Each class day (starting in Week 2), a couple of people will present their chosen picture and what they found interesting about it. Sign-ups will be during the first week of class (more details to come).



Attendance and In-class Activities

- We will have in-class activities mostly every class day, usually group tutorials and/or short written responses to questions (thus attendance is important!). Activities are designed to help us learn collaboratively and you gauge your own level of understanding of the material. Grading for these will vary week-to-week but will largely be based on completion *and quality* of the work.



Homework

- Homework in this class serves two purposes. 1: It will go into more depth on the concepts and skills than we will likely be able to get to in class. 2: They are your *best* reference in studying for exams. That being said, make sure you complete them as thoroughly as possible (you will thank yourself later when preparing for the exam). Canvas is the best place to check for updates on due dates.



Quizzes and Final Exam

- We will have four exams (lowest score dropped) one comprehensive final exam. More information to follow.

A note on technology

Modern astronomy is practiced largely using computers and other devices, and therefore some of our in-class activities will require the use of a laptop or tablet. I will give you at least one week's warning before you or someone in your working group will need to bring one in. As a reminder, the [Library](#) offers equipment checkout on a first-come, first-served basis. Please reach

out to me if you foresee a situation in which your group will not have a device to work with, and we can work something out.

Academic Integrity

It is essential that everyone construct their own unique narrative of what they have taken away from the course materials. Please do not plagiarize or copy from anyone else's work, in this course or elsewhere. For reference, De Anza College has clear guidelines for students in maintaining academic integrity, which can be found in the [Student Code of Conduct](#).

There are several *free* resources at De Anza to provide extra support, to prevent cheating and plagiarism (listed below). Additionally, please do not hesitate to email me if there is another way I can support your learning that has not already been made available.

Disability access and support

If you have registered with the [Disability Access Services](#) (DSS; located in Registration and Student Services Bldg, RSS 141; dss@deanza.edu) or need alternate support for creating an accessible learning experience, please do not hesitate to communicate with me about this. DSS staff can meet with students, review the documentation of their disabilities, and discuss the services that De Anza offers and any appropriate ADA accommodations for specific courses. Additionally, I will do whatever I can to ensure these needs are met during your time in my class. Please see [this page](#) for information about the computer accessibility lab (CAL) at De Anza.

Student disclosures of sexual violence

De Anza College strives to foster a campus free of sexual violence including sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. Please note, if you disclose a personal experience as a De Anza student, the course instructor is required to notify the Title IX Coordinator (Lauren Balducci).

To disclose any such violence confidentially, contact the Title IX coordinator using the following forms or by phone at 408-864-8945

- [Reporting Sexual Misconduct or Concern](#)
- [Contacts Page](#)

Counseling Services

The De Anza Psychological Services office provides a wide variety of counseling services for students or groups **free for students**. Please see [their website](#) for their current schedule and list of contacts. They can be contacted at 408-864-8868 or by emailing dapsychservice@deanza.edu.

Resources for Basic Needs

If you or someone you know are in need of housing assistance, food assistance, baby supplies and resources (along with many other services), the [Resources for Basic Needs page](#) has a wide range of support for De Anza students and family members.

Math, Science & Technology Resource Center

De Anza's Math, Science & Technology Resource Center has *free* peer tutoring and workshops, found [here](#). Additionally, the Student Success Center can provide help with general skills, writing, Canvas, and much more [here](#). They have drop-in tutoring via Zoom, or Weekly Individual tutoring (see updates on this for Fall 2022 on their website).

Academic Advising

For more general advice on setting up a study schedule, choosing a major/classes, and navigating other logistics of your degree, you can visit the General Counseling Division [here](#). There are several other resources related to academics and other resources for De Anza students [here](#).

*Schedule subject to change as we progress through the quarter
 **OpenStax Astronomy (OS)

Schedule* of topics

Date	Topics	Reading	Important Dates
Week 1	Day 1: Syllabus; Community agreements; APOD signups; Intro to astronomy	Syllabus	
	Day 2: Intro & Units and the Night Sky	**OS Ch. 1	HW 1 Due Friday by 11:59pm
Week 2	Day 1: Revisit community agreements; Cultural and historical astronomy	OS Ch. 2	
	Day 2: Finding resources on campus; Article discussion	Canvas Reading 1	HW 2 Due Friday by 11:59pm
Week 3	Day 1: Planetary motion, gravity; Quiz prep	OS Ch. 3	
	Day 2: Article discussion	Canvas Reading 2	Quiz 1
Week 4	Day 1: Seasons and Calendars; The Moon	OS Ch. 4	
	Day 2: Article discussion		HW 3 Due Friday by 11:59pm
Week 5	Day 1: Radiation and Spectra	OS Ch. 5	
	Day 2: Article discussion; Quiz prep	Canvas Reading 3	HW 4 Due Friday by 11:59pm
Week 6	Day 1: Telescopes	OS Ch. 6	Quiz 2
	Day 2: Science ethics discussion	Canvas Reading 4	HW 5 Due Friday by 11:59pm
Week 7	Day 1: Intro to the solar system	OS Ch. 7	
	Day 2: Article Discussion	Canvas Reading 5	HW 6 Due Friday by 11:59pm
Week 8	Day 1: Earth; Quiz prep	OS Ch. 8	
	Day 2: Article discussion		Quiz 3
Week 9	Day 1: The Moon and Mercury; Article discussion	OS Ch. 9, Canvas Reading 6	
	Day 2: Holiday break, no classes		HW 7 Due <i>Wed</i> by 11:59pm
Week 10	Day 1: Rocky Planets	OS Ch. 10	
	Day 2: Article Discussion; Quiz prep	Canvas Reading 7	HW 8 Due Friday by 11:59pm
Week 11	Day 1: Giant (Gas) Planets	OS Ch. 11	Quiz 4
	Day 2: Exoplanets; Final Exam prep	OS Ch. 14	
Finals Week	Final Exam 12/13, 1:45-3:45pm		

Student Learning Outcome(s):

- *Appraise the benefits to society of planetary research and exploration.
- *Compare and contrast the development of planetary systems and of the major planet types, including those factors that have led to Earth's unique characteristics.
- *Evaluate astronomical news items or theories concerning solar system astronomy based upon the scientific method.

Office Hours:

Zoom	F	12:30 PM	01:30 PM
In-Person	S46-A W,TH	03:45 PM	05:15 PM