ASTR 4 – Solar System Astronomy
Fall 2023

Class format: Asynchronous online

Instructor: Caitlin Kepple (she/they)
Instructor email: kepplecaitlinmarie@fhda.edu
Office hours: Tu 10:30am-12pm in PSME Village Space
Wed 3:45-5:15pm in S46-A or PLT
Th 10-11am on Zoom

Welcome to Solar System Astronomy! In this course, we will explore current and historical understandings of astronomy from a variety of perspectives. We'll 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 also 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 Learning Goals

Throughout this course, we will pursue the following set of skills related to studying astronomy:

- 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
- Describe ethical dilemmas arising out of contemporary scientific research and application from a variety of perspectives among local and/or global communities
- Understand and articulate the relevance and impact of astronomy research on an individual, community, and societal level
- Draw on and integrate lived experiences related to science to construct a shared understanding of astronomical knowledge and research

Inclusivity Statement

As a starting point for creating a welcoming learning environment, we will refer to the Inclusive Astronomy Recommendations and actively work to improve on the practices they recommend. Materials in this course will strive to center the experiences of historically marginalized groups in astronomy using an intersectional lens. We will draw on different ways of knowing and learning astronomy, both historically and today. Additionally, 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.

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 8: Last day to drop classes with no record
Nov 10: Veterans Day Holiday (no classes)
Nov 17: Last Day to withdraw ("W") from courses
Nov 23-26: Thanksgiving Holiday (no classes)
Dec 11-15: Final Exams

Grade Breakdown

Grades are based on a combination of participation, homework assignments, a special interest project, and the final exam. Each assignment type is constructed so that success in the class is possible via a wide variety of methods (not just one make-or-break assignment).

Discussion/Participation (lowest 2 dropped) - 20%
Homework Assignments (lowest dropped) - 40%
Special Interest Project - 15%
Reflections - 10%
Final Exam - 15%

Late work policy: There is a 24-hour buffer period for most assignments, with no penalty (excluding assignments that involve peer feedback). If it is between 1-10 days late, there is a 5% penalty. For more than 10 days late there is a 10% penalty. You can submit any assignment up until Friday of Week 11 at 11:59pm. *This is a hard cutoff date at the end of the quarter.*

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 quizzes and special interest project. For more details, rubrics, and make-up options for each item, see the Canvas page.

Reading, Discussion and Participation (20%)

- You can find the assigned reading for each week on Canvas, which will usually consist of a chapter from the OpenStax *Astronomy* text and also a separate article. I will also post one or two video recordings each week, which will add detail from the readings.
- Discussions are a chance for us to engage with and get to know one another. By Wednesday (11:59pm) each week, I ask that you complete the Discussion or other Participation assignment that is posted in the weekly module. If assigned, replies to someone else are due Friday (11:59pm). These assignments will vary, but you can expect to spend between 10-30 minutes maximum on them each week.

Homework (40%)

- Homework in this class serves two purposes. 1: It will go into more depth on the concepts and skills that are covered in the readings and videos. 2: They are your *best* reference in preparing for the final. That being said, make sure to complete them as thoroughly as possible, as they account for the largest percent of the grade. Homework is generally due on Friday at 11:59pm.

Special Interest Project (15%)

- During the second half of the quarter, you'll choose a topic to research and create a shareable "portfolio" for. The topic must relate to Solar System Astronomy in some way, but otherwise is fairly open-ended. More info on this will come in Week 3.

Reflections (10%)

- After you have completed all of the required reading and assignments for the week, this is your chance to put some of your own voice and personal perspective into what you have learned. Whereas the other required assignments are meant to go into the "nitty gritty" of the content, reflections are meant to be more introspective about how *you* have connected with the material for that week.

Final exam (15%)

- We will have one cumulative final exam at the end of the quarter during finals week. The format will be the same as quizzes, with multiple choice/fill in the blank/short-answer style questions. You will need a calculator, which can be borrowed from the Campus Library.

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. Any materials that I find have been plagiarized will be marked with a zero for that assignment and further action may be taken. 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.

Resources for this Class and Beyond

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).

Disability Access and Support

If you have registered with the **Disability Support Services** (DSS; located in 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 services that De Anza offers and any 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 (Laureen 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.

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 at the discretion of the instructor
**OpenStax Astronomy (OS)

Schedule* of topics

Date	Topics	Reading	Notable Dates
Week 1	Syllabus; Intro to astronomy; Units and Math skills	Syllabus, **OS Ch. 1	
Week 2	Finding resources on campus; Cultural and historical astronomy	OS Ch. 2, Canvas Reading	
Week 3	Planetary motion; Gravity	OS Ch. 3, Canvas reading	
Week 4	Seasons and Calendars; The Moon	OS Ch. 4, Canvas reading	
Week 5	Radiation and Spectra	OS Ch. 5, Canvas reading	Project Idea due
Week 6	Telescopes; Science Ethics	OS Ch. 6, Canvas reading	
Week 7	Intro to the Solar System	OS Ch. 7, Canvas reading	Project Draft due
Week 8	Earth and the Moon	OS Ch. 8, 9	Peer Feedback due
Week 9	Rocky Planets	OS Ch. 10, Canvas Reading	
Week 10	Outer Planets	OS Ch. 11, Canvas reading	Final Project Due
Week 11	Exoplanets and Life on Other Worlds	OS Ch. 14, 21 selected sections	
Finals Week	**2 hour Exam, Open Dec. 11-12 (48 hours)**		

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 panet 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:

T	10:30 AM	12:00 PM	In-Person	PST Village Space
TH	10:00 AM	11:00 AM	Zoom	
W	03:45 PM	05:15 PM	In-Person	PLT or S46-A