Solar System Astronomy

Instructor: Rachel Mastrapa, PhD

Course Description

In this class, students will analyze the physical principles, logic, and development of solar system astronomy from ancient times through the present. Class content is designed for non-science majors. Credit for the 5 quarter units of Astronomy 4 is fully transferable to both the University of California and California State University systems.

Course Details

Course	ASTR 4
CRN	00207, 00208
Section	01Z, 61Z
Quarter	Fall25
Modality	01Z Synchronous 61 Z Asynchronous
Location	Online
Textbook	Openstax Astronomy ASTR 4 Remix
Office Hours	T, Th 10 AM (Details in Communication)

Important Dates

Drop Without W	October 5
Exam 1	October 5
Exam 2	October 26
Drop With W	November 14
Exam 3	November 16
Final Exam	December 9

Grade Breakdown

Discussion	35%
Homework	35%
Exams	20%
Final	10%

Grade Ranges - No Rounding

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%
FW	De Anza Policy

About Me

Hello! I have been teaching ASTR 4 The Solar System at De Anza since 2019. Before that I taught astrobiology and geology at West Valley. I used to be a full-time research scientist working at NASA Ames and SETI Institute, where I performed experiments simulating ice formation in the outer Solar System. I enjoy spending time with my two kids, playing video games, and reading speculative fiction.

I will inform you of any changes to the policies or procedures listed below.

Communication

Weekly Communication

I will be communicating with you on a weekly basis through Canvas Announcements and the Class News discussion. Please make sure that you are receiving these messages, especially the Canvas Announcements which have reminders of important due dates. The Canvas Announcements will have information required for the class, while the Class News discussion will be mostly fun astronomy news.

My main form of communication on assignments is replies in discussions and comments in other homework. I will be checking in on discussion assignments throughout the week and will reply, mostly to either summarize what I am reading or to keep the conversation going. When grading a homework assignment, I will always comment when I deduct points, so that you can try again and increase your score. If you ask a question in an assignment, I will answer in the comments. Please remember to check the comments on your Canvas assignments.

Contact Me

If you wish to contact me, please:

- Use the Canvas messaging system (my preference)
- E-mail mastraparachel@fhda.edu
- Call or text (213) 915-6371. Please note that all calls are sent to voicemail.

Please address messages to Dr. Mastrapa. I check messages and respond between 9 AM and 6 PM and try my best to respond within 48 hours.

Office Hours

You can also speak to me at my office hours at 10 AM on Tuesdays and Thursdays. If you can't make it to office hours, I would be happy to make an appointment with you. Please send me a time and date during my availability, below, and, if I am available, I will send you a Zoom link. Please note that I count office hours and online discussions as "available" since I can answer questions at that time. If you want a private meeting, please come to office hours or schedule an appointment. Keep in mind that I will have appointments and other commitments, so try to schedule far ahead of time.

Availability

- M-F: 9 AM - 6 PM
- Sat-Sun: 9 AM - 6 PM (not preferred, but I can do it)

Class Information

Objectives

- To provide the student with as comprehensive an account of the modern field of planetary astronomy as possible.
- To create an increased sense of place and scale in the universe and a sense of how our species reached its current understanding of our world's place in the larger scheme of things.
- To acquaint the student with the appearances and other physical characteristics of the major planets, especially as they have been revealed by space probes over the last generation.

- To generate a familiarity with the various modes of research, which astronomers use to investigate other planets, including (but not limited to) various types of automated spacecraft.

Student Learning Outcomes

- 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.

Textbook Remix

I have created my own version of the textbook for this class. Please contact me immediately if you have trouble accessing the book.

Don't worry, this is 100% legal because the original textbook is an Open Educational Resource (OER). This means that it is published under a license that allows me to copy, distribute, edit, remix, and reorganize the original book as long as I include an attribution to the original document. In this case, I have not made many changes to the text, but I have deleted any of the sections that I will not be covering in this class.

This is the first time I have made my own copy of the textbook, so there may be errors. I will award 1 point of homework extra credit for each correction that you report to me.

Openstax Astronomy

If you would like to learn more about astronomy, please visit Openstax Astronomy by Fraknoi, Morrison, and Wolff. This book is designed to be an overview of all topics in astronomy, which is a very large field. If you have trouble accessing this book, please review the Openstax Student Guide.

Printed Copies (Optional)

If you prefer, you can buy a print copy of the full Openstax Astronomy textbook at the De Anza bookstore or Amazon.

Class Format: Please Check Your Section!

All work for this class is completed online. If you have one, I recommend using a laptop/desktop instead of a phone/iPad. Please check the Tech Support section below for information about computer and internet access resources at De Anza.

Synchronous:

For synchronous students, CRN 207 Section 01Z, there are **required** meetings: 1:30-2:20 pm on Tuesday and Thursday via Zoom.

Asynchronous:

For asynchronous students, CRN 208 Section 61Z, there are no required group class meetings, but you are welcome to attend the meetings along with the synchronous students. Under certain circumstances, such as missing work or low grades, I may require a private live meeting via Zoom.

The course work is divided into individual modules in Canvas. Each module contains reading assignments, videos, and homework, with due dates staggered over the week. All homework assignments are due at 11:59 PM. This class uses Canvas and Zoom. Please keep Zoom up to date. Please visit the tech support page for any problems.

Behavior

All students and instructors are expected to treat each other with respect. Everyone will be held to the expectations listed in the Student Code of Conduct and the Academic Integrity Policy.

Assignments

Late Assignments

Students are responsible for completing all assignments before the due date. Assignments may be completed after the due date any time before the final. Late homework assignments will lose 2% of their grade per day late (including weekends and holidays). (Technically, it is 0.08% per hour so that you don't get hit with the whole 2% if you are two minutes late. You're welcome.) Exams and the Final have a 20% penalty per day. Canvas automatically assigns a zero to missing assignments. All assignments must be completed by 11:59 PM on the day of the final, but if you wait that long to finish an assignment the late penalty will be very high.

Discussions: 35% of grade

This class has weekly, graded discussion assignments due each Friday. This class is a safe space. All discussion posts must be on-topic, respectful, and supportive.

Homework: 35% of grade

Most homework assignments are in the format of Canvas multiple choice quizzes. Although they are called quizzes, they are open notes/textbook and 3 chances to complete them, retaining your highest score. There is at least one quiz on the reading assignment and one quiz for each video lecture. Some homework requires text responses. All homework assignments are due at 11:59 PM.

Exams: 20% of grade

There will be three open notes exams due at 11:59 PM on the dates listed above. Exam 1 will cover all material covered before that date. Exam 2 will only include material covered since Exam 1 and Exam 3 will include material covered after Exam 2. Each exam is divided into multiple separate assignments. Each section states which modules are covered in that section. All modules must be complete for the exam to unlock.

Exams will consist of multiple-choice or matching questions in Canvas. The exam unlocks 1 week before the due date. You will have only one attempt to take each section of the exam. There is no time limit on the exam. Late exams will have a deduction of 20% per day. The exam will close 5 days after the due date. There are no make-ups or extensions for any reason. You must take all three exams. You will be able to drop the lowest grade of the three exams only if you complete all three. Missing any exam may result in being dropped from the class.

Final Exam: 10% of grade

The final is due at 11:59 PM on the first date above and closes on the second date above. The final will include all material covered over the entire course. The format is the same as the exams. Late finals will be deducted 20% per day until the final closes. There are no make-ups or extensions of the final for any reason.

AI Policy

You may use AI (artificial intelligence) for messages to me and **text** responses to assignments, as long as you follow the following requirements:

- Any text that was prepared with AI must be clearly labelled as created with AI.
- The label must include the name of the AI program that was used to create the text.
- Students may **not** use AI for multiple choice questions, true or false, matching or any short answer questions in homework or exams. Since all of these types of questions are open notes, I am trusting you to

If I suspect that an assignment was completed with AI and does not have a label, the assignment will be graded as zero, and I will post a reminder about AI use in the comments.

That zero can be replaced with a grade if the student schedules an appointment with me to discuss the answers to the assignment in person via Zoom.

When I use AI to create material for this class, I will label it the same way that I require you to. I will not use AI on any of your work without your permission. In some assignments, I will give you the option of allowing the use of AI in grading so that you can receive faster feedback.

Attendance

The De Anza catalog states that "Instructors may drop students from a class for excessive absences" and defines excessive absences as a week's worth of classes. This class can only function well if all students are active and participating.

I will never drop a student without warning, so please check your Canvas messages and email. Remember that all homework and discussion assignments can be completed late with a penalty of 2% per day.

Synchronous students: if you miss 2 discussions or 1 weeks worth of assignments (1 discussion, 4 homework), you may be dropped from the class.

Asynchronous students: if you miss 1 weeks worth of assignments (1 discussion, 4 homework), you may be dropped from the class.

I will be using the roll call attendance tool in Canvas to track attendance on Wednesdays and Saturdays. If you are marked as present, it means that you have completed all assignments and for synchronous students, you have attended class meetings. The attendance assignment will not count toward your grade, but will be used to track your progress. If you see your attendance grade drop, check for missing assignments.

First Two Weeks

If you have **any** missing homework or discussion assignments, I will drop you from the class, following these steps:

1. On Friday of Week 1, I will contact you by your preferred method if you are missing any assignments. For synchronous students, missing a discussion meeting (1:30 to 2:20 on T, Th) counts as missing an assignment.
2. You will have until Wednesday of Week 2 to contact me if you have extenuating circumstances and still want to stay in the class.
3. If you have not completed the assignments or contacted me by Wednesday of Week 2, I will send a second reminder.

4. On Friday of Week 2, I will drop any students that have missing assignments and have not contacted me. This will be before the Drop Without a W date, so any dropped students will not have a W in the class.

Before Drop With a W Date

After the first two weeks, if a student is missing work and does not respond to me or has not logged into Canvas for 2 weeks, I will refer them to De Anza Connect. De Anza College offers a broad range of services for students, but finding the right one can be a challenge. De Anza Connect provides an easy way to help students find the services they need. A referral to De Anza Connect is not a punishment but a way to make sure a student gets help.

If a student misses any exam, I will drop them after the exam close date. I will first send a message the Monday after the exam with a reminder that the exam closes on Friday.

For the rest of the quarter, I will be regularly checking on student progress, including completion of assignments and last login to Canvas. However, I will not drop any student until right before the drop with a W date. If any student is missing assignments, I will reach out to them with reminders. I may require a live, private meeting through Zoom so that we can create a plan for success.

On the drop with a W date, I will drop any student that is missing 1 discussion assignment or 4 homework assignments, and refer the student to De Anza Connect.

After the Drop with a W Date

From the De Anza Grade Policies: The FW grade indicates that a student has stopped participating in a course after the last day to officially withdraw, without achieving a final passing grade, and the student has not received college authorization to withdraw under extenuating circumstances. Please continue to participate in the class throughout the quarter and complete the final.

Resources

Tech Support

If you have any trouble accessing the online course materials, please contact me immediately. I will try to help as best as I can, but I am limited in what I can do. Below are some tech resources:

- If you are having trouble with Zoom, Canvas, or MyPortal, please check the tech support page.
- If you are registered for 6 units you can apply for a refurbished computer.
- All students can borrow computers and Wi-Fi Hotspots from the library.

- CollegeBuys offers discounts on prepaid or monthly internet service (Wi-Fi Hotspot). (And Adobe software, but you don't need that for this class)

Tutoring

Please visit the Student Success Center for tutoring, workshops, and other resources. Free, drop-in tutoring is available in the Math, Science, & Tech Resource Center in S43.

De Anza Connect

Navigating college bureaucracy is a complicated task, even without other responsibilities such as work and family. De Anza provides a broad range of services to support you be successful. I encourage you to reach out to De Anza Connect. They can help you find the campus resources and services that work best for you.

Complaints and Concerns

From the De Anza College site for complaints and concerns: "We want every student to have a **positive experience** at De Anza College. **If you are a student** with a complaint or concern about a situation you've encountered, here are some different ways that you can request a **closer review** and a **fair resolution**." This covers anything from complex paperwork to safety concerns. I hope that you never need this.

Class Policy

Statement on Inclusion

I am dedicated to making this class an open and welcoming environment where everyone can succeed. This includes differences in ability, age, appearance, athletics and student organization involvement, ethnicity, family/marital status, gender, gender expression, immigration status, language, military/veteran status, nationality, political ideology, race, religion/spirituality, sex, sexuality, socio-economic status, and other personal identities and experiences. Please contact me immediately if you encounter any barriers to your success.

I am committed to creating a course that is inclusive in its design. If you encounter barriers, please contact me so that we can work together to create a fair and reasonable design adjustment.

If you are a student with a disability, or think you may have a disability, you are also welcome to initiate this conversation with the Disability Support Programs and Services (DSPS). DSPS works with students with disabilities and faculty members to identify reasonable accommodations. If you have already been approved for accommodations through DSPS, I will automatically receive a letter with a description of the accommodations. Please feel free to contact me to confirm receipt of the letter and let me know if you are experiencing any barriers to your success.

Title IX: Confidentiality and Responsible Employee Statement

I am committed to creating a safe and open learning environment for all students. If you (or someone you know) have experienced any form of sexual misconduct, including sexual assault, dating or domestic violence, or stalking, know that help and support are available. The College strongly encourages all members of the community to take action, seek support, and report incidents of sexual misconduct to the Title IX Office.

Please be aware that under Title IX of the Education Amendments of 1972, I am required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Mental Health and Wellness Center 408.864.8868 (RSS Building, Room 258, Second Floor) or Student Health Services 408.864.8732 (Health Services Office, Hinson Campus Center, Lower Level).

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	10:00 AM - 11:00 AM	Zoom
TH	10:00 AM - 11:00 AM	Zoom