

## ASTRONOMY 4

### Solar System Astronomy

De Anza College Fall 2023

#### Course Information Summary

**Term:** 2023 Fall De Anza | **CRN:** 00209 | **Title:** SOLAR SYSTEM ASTRONOMY | **Course:** ASTR D004.02Z | **Room:** Asynchronous online + Synchronous Zoom TTh 2:30-3:20 pm

**Canvas course name:** F23 ASTR D004 02Z Solar System Astronomy

**Instructor:** Srikar Srinath

**Email:** [srinathsrikar@fhda.edu](mailto:srinathsrikar@fhda.edu)

#### Textbook:

Your textbook for this class, *Astronomy* by FHDA's own Prof. Fraknoi is available for **free** online courtesy the amazing folks at OpenStax, in a variety of formats (web view, PDF, ePUB)!

You have several options to obtain this book:

- View online at <https://openstax.org/details/astronomy>
- Download a PDF [**recommended** - you can annotate in a PDF reader]
- Order a print copy (Not recommended!)
- Download on iBooks
- Download on Kindle[Links to an external site.](#) (This still links to the 1st edition of the book - probably better to download the latest epub format directly from OpenStax above)

You can use whichever format(s) you want. PDF on your device is recommended, followed by Web View

Lectures: Online on Zoom, recorded and archived on the Zoom site, and linked within Canvas. Additional supplementary lectures and videos to be watched on your own time.

Office Hours and questions:

- On Canvas Class Question & Answer discussion board
- In Zoom/Canvas class TTh 3:20-3:50 pm Pacific Time
- Via Zoom by appointment (please send me 3 available or preferred times when asking for an appointment)
- Canvas Inbox

For the inbox and discussion board options, if you send in a question on Friday evening, I may not get to it until Sunday evening, otherwise expect a response within 12-24 hours. If you do not hear from me in that time frame, please send me a reminder - your message may have slipped down in my Inbox.

### **Introduction to Astronomy 4**

Astronomy 4 is an introductory-level course about the contents of our Solar System and what we have learned about them in the past 400+ years of telescopic observation and 60 years of space exploration.

The course has no prerequisites. However, De Anza College does advise the following: English as a Second Language 5. The class is taught with the non-Science major in mind, but we will be doing Science because anybody and everybody can (and does)!

### **Class Format**

This class is mostly a *synchronous* online class, which means lectures are held live with recordings and supplementary material made available shortly afterwards. There will be 2 hours of lecture every week, live on Zoom, recorded, and archived on Zoom for those who miss lectures or want a recap, with links to supplementary lectures on YouTube (by other, and often better, instructors) and linked on the Canvas website. You can expect to be tested on all the material presented in lectures and in the textbook reading assignments.

Synchronous Zoom sessions will be held on Tuesdays and Thursdays from 2:30 pm to 3:20 pm Pacific Time. There will be **no synchronous session** on Th Nov 23 (Thanksgiving).

### **Registration**

If you wish to add the class, you must obtain an add code from me. It is your responsibility to use the add code before the deadline. The preferred method is to add yourself to the class waitlist so I can send you an add code from Active Roster. If you are not allowed to add yourself to the waitlist, please email me directly at the address above. Pretty much anyone who asks for an add code will get one (unless you tell me you want to join my *Astrology* class - actually, you will get an add code even then).

### **Attendance**

Regular engagement with online content is required - there is a difference between attending and being present (the latter is preferred). Participation in online discussions and in synchronous Zoom sessions can boost your grade by as much as 5% (half a grade level). Not signing in or not participating will not hurt your grade.

### **Exams and Grades**

Your class grade will be based on your performance on a midterm and a final exam.

1. A midterm will be made available Fri, Oct 27 on Canvas. It will be multiple choice, timed, unproctored, and open book/notes/Internet. This will be 50% of your grade.
2. The week of Finals (Mon Dec 11), a final exam will be posted on Canvas. This will also be 50% of your grade.
3. Extra credit opportunities:
  - a. Every week, recent scientific articles related to the course material will be posted. You will be asked to answer some brief questions about the article.
  - b. Later in the class (on or after the 8th week), you will be asked to select a Solar System-themed video from the [Silicon Valley Astronomy LectureLinks to an external site.](#) series and write a short report about the lecture of your choice.

### Cheating

#### JUST DON'T DO IT!

Cheating on any assignment is grounds for a failing grade in the class and a permanent note in the student's file with additional punishment at the discretion of the administration. Some assignments use Turnitin, a plagiarism checking tool. The output of that tool can be, and has been, used to determine whether cheating has occurred and penalized accordingly.

That said, you are encouraged to consult external sources (I link to several of them every week) and use them in your writing provided you mostly use your own words in describing that work and supply either a web link or a pointer to a specific page in a book etc. Please use reputed sources with solid science reporting.

### Course Outline & Reading

Lecture material is tentative based on progress made in class. Tests will only feature topics covered in class or in the book until the testing date.

Date	Textbook chapter	Topic
<b>Week 1</b>		
Sep 25	Ch 1	Cosmic Context
	Ch 2	Diurnal, Annual, Planetary apparent motions
<b>Week 2</b>		
Oct 2	Ch 3	Orbits - Kepler & Newton, The Seasons

	Ch 4	Moon phases, Tides, Eclipses
<b>Week 3</b>		
Oct 9	Ch 5	Time & Light
	Ch 5	Spectra
<b>Week 4</b>		
Oct 16	Ch 6	Telescopes on Earth and in Space. How they work.
	Ch 7	Overview of the Solar System
<b>Week 5</b>		
Oct 23	<b>Midterm week 1</b>	<b>Practice midterm available</b>
<b>Oct 27</b>		<b>Midterm available</b>
<b>Oct 30</b>		<b>Midterm Due</b>
<b>Week 6</b>		
Oct 30	Ch 8	Earth as a planet
		Earth-shaping processes and Climate Change
<b>Week 7</b>		
Nov 6	Ch 9	Cratered Worlds: The Moon and Mercury
	Ch 10.-10.3	Venus
<b>Week 8</b>		
Nov 13	Ch 10.4-10.6	Mars
	Ch 11	The Giant Planets
<b>Week 9</b>		<b>Thanksgiving Break</b>
Nov 20	Ch 12	Moons of the Giant Planets
<b>Week 10</b>		
Nov 27	Ch 13, 14	Dwarf planets, asteroids, comets

	Ch 15	The Sun
<b>Week 11</b>		
Dec 4	Ch 16	The Sun, Star & Solar System formation
	Ch 21, 30	Planets around other stars, Life in the Galaxy
<b>Week 12</b>		
<b>Dec 15</b>	<b>Finals</b>	<b>Final due by 11:59 pm</b>

**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:**

T,TH 03:20 PM 03:50 PM Zoom