

# ASTRONOMY 10

## Stellar Astronomy

De Anza College Spring 2024

### Course Information Summary

**Term:** 2024 Spring De Anza | **CRN:** 48735 | **Title:** STELLAR ASTRONOMY | **Course:** ASTR D010.18 | **Room:** De Anza Planetarium TTh 4:00-6:15 pm

**Canvas course name:** Sp24 ASTR D010 18 Stellar 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 (and others) 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](https://openstax.org/details/astronomy) 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](#) (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:** In-person in the De Anza Planetarium Tu/Th 4:00 pm - 6:15 pm. Additional supplementary lecture and videos to be watched on your own time (optional).

### Office Hours and questions:

- On Canvas Class [Question & Answer discussion board](#)
- In class TTh 6:00-6:30 pm

- 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 10**

Astronomy 10 is an introductory-level course about the contents of our Universe minus our Solar System plus our Sun (apologies in advance for adding a math expression to the syllabus and for going way beyond just stars), 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 in person. There will be 4 hours of lecture every week in the De Anza planetarium on Tuesdays and Thursdays from 4:00 pm to 6:15 pm (there will be breaks), with supplementary lectures on YouTube (by other, and often better, instructors) linked on the Canvas website. You can expect to be tested on all of the material presented in lecture as well as in the textbook reading assignments.

### ***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 attendance is strongly encouraged - there is a difference between attending and being present (the latter is preferred). Participation in class can boost your grade by as much as 5% (half a grade level). Not participating **will not** hurt your grade.

## ***Exams and Grades***

Your class grade will be based on your performance on an in-class midterm and an in-class final exam.

1. The midterm will be held on Thu, May 09 in class. It will be multiple choice, timed, and open book/notes. This will be 50% of your grade.
2. The final will be held Thu, Jun 20 in class. It will have the same format as the midterm. 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 on Canvas. You will be asked to answer some short questions about the article.
  - b. Later in the class (on or after the 8th week), you will be asked to select a video from the [Silicon Valley Astronomy Lecture](#) series that is not about our Solar System (the Sun is fine as a topic) and write a short report about the lecture of your choice. This must be submitted on Canvas via Turnitin before the end of the quarter on Fri, Jun 28.

## ***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.

## **Generative AI Use**

The world has changed after the release of ChatGPT and similar models in late 2022. If you are not using Generative AI (GenAI) based tools then you are at a disadvantage to those in your class who are using it. Detecting its use is very hard, but blindly using the tools without being aware of their biases and issues can lead to shortfalls in your education. Instead of intrusively policing your use of GenAI, I am happy to help and guide you in the use of these tools with the understanding that you disclose your use in assignments (there is no penalty for doing so). You are highly encouraged to use such tools for help with studying -- they are great for providing alternate explanations or simplifying material.

## **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.

<b>Date</b>	<b>Textbook chapter</b>	<b>Topic</b>
<b>Week 1</b>		
Apr 09	Ch 1	Cosmic Context
Apr 11	Ch 2	Observing The Sky - from ancient times to modern
<b>Week 2</b>		
Apr 16	Ch 3	Gravity and Motion
Apr 18	Ch 5	Time & Light
<b>Week 3</b>		
Apr 23	Ch 5	Atomic Theory & Spectra
Apr 25	Ch 6	Telescopes on Earth and in Space. How they work.
<b>Week 4</b>		
Apr 30	Ch 24	Special and General Relativity
May 02	--	Overview of the Universe - a reintroduction
<b>Week 5</b>		
May 07	<b>Midterm week</b>	Missed topics and review

<b>May 09</b>		<b>Midterm in class</b>
<b>Week 6</b>		
May 14	Ch 29	The Big Bang
May 16	Ch 26	Galaxies
<b>Week 7</b>		
May 21	Ch 27/28	Galactic evolution, AGNs and SMBH
May 23	Ch 25	The Milky Way
<b>Week 8</b>		
May 28	Ch 20/17	Gas, dust, the cosmic web, analyzing starlight
May 30	Ch 18/19	Overview of stars and cosmic distances
<b>Week 9</b>		
Jun 04	Ch 21	Birth of stars and planet formation
Jun 06	Ch 22/23/24	Star middle age and death
<b>Week 10</b>		
Jun 11	Ch 15/16	The Sun
Jun 12	Ch 21	Exoplanet detection
<b>Week 11</b>		
Jun 18	Ch 30	Life in the Galaxy
<b>Jun 20</b>		<b>Final in class</b>
<b>Week 12</b>		
Jun 28		<b>Extra credit assignments due</b>

**Student Learning Outcome(s):**

- Appraise the benefits to society of astronomical research concerning stars and stellar systems.
- Evaluate the impact on Earth's characteristics of the evolution of stars and stellar systems.
- Evaluate astronomical news items or theories about stellar astronomy based upon the scientific method.

**Office Hours:**

T,TH	06:15 PM	06:45 PM	In-Person	PLT
M,W	02:20 PM	02:50 PM	Zoom	