

# Course Syllabus

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## ASTRONOMY 4

### Solar System Astronomy

De Anza College Spring 2021

#### Course Information Summary

**Term:** 2021 Spring De Anza | **CRN:** 46101 | **Title:** SOLAR SYSTEM ASTRONOMY | **Course:** ASTR D004.05Z | **Room:** Asynchronous online + Synchronous Zoom MW 6:00-6:50 pm

**Canvas course name:** [Sp21 ASTR D004 05Z Solar System Astronomy](#)

**Instructor:** Srikar Srinath

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

## Textbook:

Your textbook for this class is available for **free** online, in a variety of formats (web view, PDF, ePUB)!

[Astronomy from OpenStax \(https://openstax.org/details/astronomy\)](https://openstax.org/details/astronomy)

You have several options to obtain this book:

- [View online \(https://openstax.org/books/astronomy/pages/1-introduction\)](https://openstax.org/books/astronomy/pages/1-introduction)
- [Download a PDF \(https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/Astronomy-OP\\_zlft6LJ.pdf\)](https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/Astronomy-OP_zlft6LJ.pdf)
- [Order a print copy \(https://openstax.org/\)](https://openstax.org/)
- [Download on iBooks \(https://itunes.apple.com/us/book/id1208733375\)](https://itunes.apple.com/us/book/id1208733375)

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

**Lectures:** Online on YouTube and linked within Canvas

#### Office Hours and questions:

- On Canvas Class Question & Answer discussion board
- In Zoom/Canvas class W 6:00-6:50 pm Pacific Time
- Via Zoom by appointment (please send me available or preferred times when asking for an appointment)
- Canvas Inbox

For chat and inbox options, if you send in a question on Friday evening I may not get to it until 48 hours later, otherwise expect a response within 12-24 hours.

## **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 an *asynchronous* online class which means lectures can be viewed at any time once made available. There will be 3-4 hours of lecture every week posted in advance to the YouTube and 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.

In addition, there is a synchronous Zoom session on Mondays from 6:00 pm to 6:50 pm Pacific Time (there will be no session on Memorial Day)

## **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.

## **Attendance**

Regular engagement with online content is required: participation in online discussions and completion of lecture-related assignments can boost your grade by as much as 5% (half a grade level).

## **Exams and Grades**

Your class grade will be based on your performance on lecture assignments, homework, a midterm and a final report.

1. Every lecture will have some associated short answer questions associated. Answering these questions will make up a total of 25% of your grade. Your two lowest scores will be dropped. These assignments have generous due dates (typically 7-10 days) and no late penalties, but please try not to fall behind on them because work will pile up towards the end of the quarter.
2. Every other week (i.e. skipping a week), except during midterm and finals week, a homework assignment on Canvas will be posted. This will make up 25% of your grade. Two homework assignments will actually be preparation for your final report so I can give you feedback on its format

and on your understanding of concepts. You are *strongly encouraged* to turn those in because it will make your final assignment much easier. Homework deadlines are not extended.

3. A midterm will be made available Fri, May 14. It will be multiple choice, timed and open book/notes/Internet. This will **not** be dropped and will be 25% of your grade.
4. The week of Finals, a report (single-spaced, minimum 2000 words) will be due. This will **not** be dropped and will be 25% of your grade. The report topic will be revealed in Week 2 of the quarter.

## 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 a number 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> |                  |  |
| Apr 5         | Ch 1             | Cosmic Context                                   |
|               | Ch 2             | Diurnal, Annual, Planetary apparent motions      |
| <b>Week 2</b> |                  |  |
| Apr 12        | Ch 3             | Orbits - Kepler & Newton, The Seasons            |
|               | Ch 4             | Moon phases, Tides, Eclipses                     |
| <b>Week 3</b> |                  |  |
| Apr 19        | Ch 5             | Time & Light                                     |
|               | Ch 5             | Spectra  |
| <b>Week 4</b> |                  |  |
| Apr 26        | Ch 6             | Telescopes on Earth and in Space. How they work. |

|                |                       |  |
|----------------|-----------------------|--|
|                | Ch 7                  | Overview of the Solar System                                   |
| <b>Week 5</b>  |                       |  |
| May 3          | Ch 8                  | Earth as a planet  |
|                |                       | Earth-shaping processes and Climate Change                     |
| <b>Week 6</b>  |                       |  |
| May 10         | <b>Midterm week 1</b> | <b>Practice midterm available</b>                              |
| <b>May 14</b>  |                       | <b>Midterm available</b>                                       |
| <b>Week 7</b>  |                       |  |
| May 17         | <b>Midterm week 2</b> |  |
| <b>May 19</b>  |                       | <b>Midterm Due</b>   |
| <b>Week 8</b>  |                       |  |
| May 24         | Ch 9                  | Cratered Worlds: The Moon and Mercury                          |
|                | Ch 10.-10.3           | Venus  |
| <b>Week 9</b>  |                       |  |
| May 31         | Ch 10.4-10.6          | Mars   |
|                | Ch 11                 | The Giant Planets  |
| <b>Week 10</b> |                       |  |
| Jun 7          | Ch 12                 | Moons of the Giant Planets                                     |
|                | Ch 13, 14             | Dwarf planets, asteroids, comets                               |
| <b>Week 11</b> |                       |  |
| Jun 14         | Ch 15, 16             | The Sun  |
|                | Ch 21, 30             | Star Formation, Planets around other stars, Life in our Galaxy |
| <b>Finals</b>  |                       |  |
| <b>Jun 25</b>  |                       | <b>Final assignment due by 11:59 pm</b>                        |

## Course Summary:

**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.