

ASTR 15L Section 02

Astronomy 15L

Astronomy Laboratory

Labs: Tuesdays 1:30 – 3:45 pm in room S-15 (This room is in Building S1, near the De Anza Planetarium)

Instructor:

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Office Hours: M, Tue, and Thu, 12:00 – 1:20pm

Everything you need to know about the class – i.e. the same information as in this syllabus – can be found on the CLASS WEBSITE at:

mrcgeoastro.com/astro15/index.html

Make sure to bookmark that site and refer to it whenever you have questions!

Textbook: This class has no assigned textbook.

However, if you're also taking Astro 4 or Astro 10, the textbook for those classes is available for free online at:

<https://openstax.org/details/books/astronomy>

I recommend downloading the PDF version and using a PDF-reader program to read it, such as the free Adobe Reader software.

Our Goals This Quarter:

You'll be learning a lot about what solar systems are and how they work this quarter. You'll also learn a lot about how a large college course like this works. Here are some specific things I want to help you do; I hope that doing these things enables you to become a more scientifically aware citizen, and gets you excited about science no matter what your eventual path in life!

1. You'll often see, hear, or read something about the universe (like a news article on the web). How accurately has it been reported, and what is the level of certainty on the part of the scientists who are investigating that part of the universe? Science is all about evaluating claims, and scientists also call this *testing hypotheses*. As we work through our labs, you'll get the chance to do this.
2. Compare and contrast the planets (and other objects) in our solar system, and in other solar systems, so as to understand why they turned out the way they did. We call this *comparative planetology*, and it's one of the main goals of the astronomers who study solar systems – i.e. the planets and other objects that orbit around stars.

GRADING

Step 1:

You do the labs and take the final exam.

Lab 1	40 pts
Lab 2	40pts
Lab 3	40 pts
Lab 4	40 pts
Lab 5	40 pts
Lab 6	40 pts
Lab 7	40 pts
Lab 8	40 pts
Lab 9	40 pts
Lab 10	40 pts
FINAL EXAM	80 pts

Step 2:

The lowest two (2) labs get dropped.

-80 pts = 320 pts of midterms

The final exam doesn't get dropped.

Step 3:

I calculate the final grade.

Your final percentage =

The points you earned, after dropping lowest scores as described at left

DIVIDED BY...

400 possible points

I then round your final percentage to the nearest whole percent, and use the following grading scale:

89-100	A
79-88	B
68-78	C
57-67	D
<57	F

Notes:

1. A percentage like 88.7% rounds to 89, so it's an A.
2. If something causes you to miss a test or quiz, that will be the one you drop.
3. I'm afraid my schedule won't allow me to give you a final at a different time in order to fit your vacation. You'll need to plan around the final - *you may want to tell family members about this before they buy non-refundable plane tickets.*
4. Since the deadline to add classes is the end of the second week of class, it occasionally happens that a student adds the class after the first one or two labs. In such a case, the total points possible will be adjusted to reflect the number of labs that occur after they enroll.

Astronomy 15L Rules and Procedures

ATTENDANCE:

Starting on the first day, I'll use a sign-in chart to learn peoples' names, and to take attendance. Remember (from the grading policy) that the lowest two labs get dropped. If you have to miss a lab, that will be one of the labs that gets dropped. If you miss more than three labs, you are at risk of getting dropped from the class.

COMPUTER USAGE AND CHECK-OUT:

Most of our lab work will involve computer software. You can use your own computer if you want, but make sure your computer can run Adobe Flash animations. The lab has a set of MacBook Pro computers. If you want to use one, you'll need to temporarily give your instructor a photo I.D. You'll get your I.D. back when you turn the computer back in at the end of class.

COLLABORATION AND QUESTIONS DURING LAB SESSIONS:

During the lab exercises, you can ask your instructor and/or your fellow students questions about the concepts and methods involved in the lab exercise. Collaboration can really help you figure out what's going on and what you've been asked to do!

However, you can't ask other students "What'd you get?", and you can't ask your instructor "Is this the right answer?", since you'll be turning in the lab for grading. I'll let you know if you're on the right track.

DROPPING THE CLASS:

I would like to see everyone complete the course, earn a good grade, and become excited about science. However, the realities of life sometimes get in the way. You should assess your situation realistically throughout the quarter. If you decide to drop the class, you must do so by the final date to drop with a W, or you will receive an F. Let me re-emphasize that: If you decide to drop the course, it is your responsibility to go to the registrar and drop yourself. The deadline is the end of the eighth week.

VERY IMPORTANT INFORMATION ABOUT DROPPING AND THE END OF THE QUARTER:

For many years, De Anza students have been given the impression that "your instructor can drop you" after the end of the 8th week. **THIS IS NO LONGER TRUE!** If you have a personal hardship after the end of the 8th week, you will have to request a "Late Drop" using a form called "Petition for Exception to Registration Policies", which will be evaluated by the Admission and Records office.

FINAL EXAM:

After you start working on the exam, you must hand it in before leaving the room.

If you arrive late for the exam, you won't be given extra time to finish it.

Once the first person has turned it in and left the room, no further latecomers will be given tests.

If you find yourself wanting to use a calculator on a test, you'll need to use a regular calculator; you can't use a cell-phone calculator.

NOTICE: Cheating on any lab or exam is grounds for a failing grade in the class and a permanent note to a student's file. "Cheating" is defined (in this course) to be an effort by a student to obtain a grade by any means other than demonstration of that student's individual achievement in mastering the class material and/or fulfilling terms of a project.

Further grounds for expulsion from the class include any activity which interferes with others' ability to benefit from the class (such as chronic distracting behavior) of which degrades the lab room's function or environment.

ASTRONOMY 15 Lab Schedule, Spring 2019

	Date	LAB TOPIC
Wk 1	April 8	Maps of the Sky
Wk 2	April 15	Internet Image Hunt and Seasons of the Sky
Wk 3	April 22	Moon Phases
Wk 4	April 29	Kepler's Laws
Wk 5	May 6	Planetary Atmospheres
Wk 6	May 13	Astronomical Image Processing
Wk 7	May 20	Blackbody Spectra and Filtered Light
Wk 8	May 27	No Lab HOLIDAY
Wk 9	June 3	The Hertzsprung-Russell Diagram
Wk 10	June 10	Extrasolar Planets
Wk 11	June 17	The Cosmic Distance Ladder
Wk 12	June 24	FINAL EXAM This has the same number of points as 2 labs.

Student Learning Outcome(s):

- *Evaluate claims about the nature of the physical universe using the scientific method of hypothesis testing.
- *Compare and contrast the histories of solar-system bodies (e.g. moons, planets, asteroids, comets, meteorites) by integrating data from spacecraft and Earth-based observatories.