

Hybrid Format - Astronomy 10

Schedule # 55062 Spring 2021

Lecture content on the class Canvas page

Lab held Wednesday 1:30 - 3:20 PM

(<https://cccconfer.zoom.us/j/92044822311>)

Contact Information:

Instructor Name: Kurt Shults

Phone Number: 559-707-5045

Email: kurt.shults@scccd.edu

Office Hours:

Available by appointment.

Required Course Materials:

- TEXTBOOK: OpenStax Astronomy Textbook
<https://openstax.org/details/books/astronomy> This is a free textbook that you can download or view from your phone or computer. It is accessible everywhere you have internet.
- A scientific non-graphing calculator

Course Description:

This course covers Astronomical concepts with a minimum of math while fulfilling the science with a lab general education requirement for the CSU and UC systems. The topics covered in this course are The planets, solar system mechanics, stellar evolution, galaxies, and basic cosmology.

Course Content:

- Naked eye astronomy: the motion of the Sun, Moon, and stars as seen from the Earth; seasonal changes; phases of the Moon and eclipses.
- Scientific method and history of astronomy: geocentric and heliocentric models, Copernican Revolution, and Kepler's laws.
- Physics: gravity, temperature, pressure, energy, and conservation laws.
- Light: the nature of light, the electromagnetic spectrum, the atom and spectroscopy, telescopes on Earth and in space, and the Doppler effect.
- Formation and evolution of the solar system.
- The role plate tectonics, volcanism, and magnetic fields play in shaping the surfaces, habitability, and other properties of different planetary bodies.
- Earth: internal structure, surface and atmosphere, magnetosphere, and ability to support life.
- Terrestrial planets: characteristics of the Moon, Mercury, Venus, and Mars, in comparison to Earth.
- Jovian planets: characteristics and properties of Jupiter, Saturn, Uranus, and Neptune.
- Comets, asteroids, and meteorites.
- Sun: internal structure, nuclear fusion, solar activity, heliosphere, and the limits of the solar system.
- Stars: classification of stars, Hertzsprung-Russell (HR) diagrams, main sequence, luminosity, and apparent and absolute brightness.
- Cosmology: large-scale structure, Cosmic Background Microwave Radiation (CMBR), cosmic evolution, the expanding Universe, the geometry of the Universe, and the fate of the Universe.

Textbook:

Great news: your textbook for this class is available for **free** online!

[Astronomy from OpenStax](#), ISBN 1-947172-01-8

You have several options to obtain this book:

- [View online](#) (Links to an external site.) (Links to an external site.)
- [Download a PDF](#) (Links to an external site.) (Links to an external site.)
- [Order a print copy](#) (Links to an external site.) (Links to an external site.)
- [Download on iBooks](#) (Links to an external site.) (Links to an external site.)

You can use whichever formats you want. Web View is recommended -- the responsive design works seamlessly on any device.

Calendar:

- January 18 (Mon) Martin Luther King Jr. Day observed (no classes held, campus closed)
- February 12 (Fri) Lincoln Day observance (no classes held, campus closed)
- February 15 (Mon) Washington Day observance (no classes held, campus closed)
- March 12 (Fri) Last Day to drop a full-term class (letter grades assigned after this date)
- March 29 - April 2 (Mon-Fri) Spring recess (no classes held, campus open)
- **Final Exam: Wednesday, May 19th (Time TBD)**

Exams:

There will be three midterm exams and one final exam. The exams have conceptual questions that are multiple-choice in format. There will also be some very simple algebra problems that are appropriate for astronomy. Don't worry; you'll have lots of support for the math part. The exams contribute **50%** of your semester grade, so they are very important to prepare for.

Makeup exams will be given with preapproval only. Please show up for your exam. Details of how the exams will be administered will be given at a later date.

Homework:

Doing your homework assists you in two ways: 1) it helps you learn the material, and 2) it lifts your grade.

Your homework is **20%** of your semester grade. Homework is completed online through Canvas. The homework assignments will be posted and may require you to watch a video (Crash Course Astronomy or some other resource) and then will involve you in answering some multiple-choice questions on the material. These questions will be the foundation for what I will asking during the exams.

There will also be reading guides and homework questions based upon the required reading for each module. This reading will usually consist of sections from the textbook, however other sources may be used. These reading homework questions will usually be in a multiple-choice format, however, some of these will require one or two sentence answers.

No late homework will be accepted. You need to be prepared. Start working on the homework as soon as it is posted.

Laboratory:

This class has a lab that is **mandatory**. The lab makes up 20% of your grade.

There will be no makeup sessions for Lab. I will drop your lowest lab score. Missing two or more labs will significantly reduce your grade. Make plans to attend every lab session! If you are unable to attend lab sessions, recordings will be available on Canvas after the fact. It is your responsibility to watch the Zoom meetings in a timely manner so as to remain up to speed on any announcements and material discussed in the Zoom meetings.

Online Discussions:

There are online class discussions that are graded. These discussions cover several topics and can be varied in type. The discussion accounts for **10%** of your grade. The objective of the discussions is twofold: 1) assist in creating the important sense of community in the class and 2) help you clarify your understanding of the discussion topics. **You will need to make your first post for the biweekly discussion on the first Sunday evening and respond to two other posts by the following Sunday evening for full credit.** Use complete sentences and cite sources when applicable. Your responses must be more substantive than “Yah, I agree” or “Not me”. Use complete sentences and make sure you are contributing to the discussion. This form of communication will be important for your future education at a four-year university.

No late Discussion Posts will be accepted. If you are not submitting your initial post by Sunday evening of the first week, you will not be giving your classmates the opportunity to respond by Sunday evening the following week. Please manage your time wisely.

Grading Policy:

% Grade for the Class	Letter Grade for the Class
90% -100%	A
80%-89%	B

65%-79%	C
55%-64%	D
0%-54%	F

Category of Classwork	% of Class Grade
Exams	50%
Homework	20%
Lab Reports	20%
Online Discussion	10%

Important Notes:

- **All first week assignments need to be completed and submitted by the due date to avoid possibly being dropped from the class.**
- Any student needing accommodations should inform the instructor. Students with disabilities who may need accommodations for this class are encouraged to notify the instructor and contact DSPS early in the semester so that reasonable accommodations may be implemented as soon as possible. All information will remain confidential.
- Academic dishonesty and plagiarism will result in a failing grade on the assignment. Using someone else's ideas or phrasing and representing those ideas or phrasing as our own, either on purpose or through carelessness, is a serious offense known as plagiarism. "Ideas or phrasing" includes written or spoken material, from whole papers and paragraphs to sentences, and, indeed, phrases but it also includes statistics, lab results, artwork, etc.