



## Syllabus for Astronomy 10

### Course Information

Semester & Year: Summer 2022 (6/1-7/21)

Course ID & Section #: Astro 10 (V4065), Course units: 3.0

Instructor's name: Dr. Jon Pedicino

Day/Time, optional **Zoom class meetings: MW, 6:30- 8:00 PM** Meeting ID 945 8805 6369

Zoom link: <https://cccconfer.zoom.us/j/94588056369>

Course Units: 3.0

### Instructor Contact Information

Office: Online **Zoom, (Wed 8:00-8:30 PM) Meeting ID 920-1599-8302**

Email address: [jon-pedicino@redwoods.edu](mailto:jon-pedicino@redwoods.edu), Zoom phone in # 1-669-900-6833 (then input meeting ID)

### Catalog Description

An overview of historical approaches to understanding the science of astronomy and our place in the universe. We will explore light and its role in the transmission of information, telescopes, the formation of the solar system, the planets and moons and their potential for life, the sun, the evolutionary life cycle and death of stars, black holes, and the formation of the universe.

### Course Student Learning Outcomes *(from course outline of record)*

1. Demonstrate how the scientific method is used to understand natural phenomena
2. Define and identify the different types of electromagnetic radiation.
3. Analyze the evolution of the solar system and the development of the Earth's atmosphere and landforms.
4. Define the nuclear processes that take place in the sun and relate those to the birth, evolution, and eventual death of the range of stars present in the cosmos.

### Grading

**90%**- Unit Summaries (12), 2 pg. each, due twice a week, 75 points each, **10%**-Paper, 2-3 pg., 100 points  
**A (>93.3%)**, **A- (90-93.3%)**, **B+ (86.7-89.9%)**, **B (83.3-86.6%)**, **B- (80-83.2%)**, **C+ (76.7-79.9%)**, **C (70-76.6%)**, **D (55-69.9%)**, **F (<55%)**

### Accessibility

Students will have access to online course materials that comply with the Americans with Disabilities Act of 1990 (ADA), Section 508 of the Rehabilitation Act of 1973, and College of the Redwoods policies.

Students who discover access issues with this class should contact the instructor.

College of the Redwoods is also committed to making reasonable accommodations for qualified students with disabilities. If you have a disability or believe you might benefit from disability-related services and accommodations, please contact your instructor or [Disability Services and Programs for Students](#) (DSPS). Students may make requests for alternative media by contacting DSPS based on their campus location:

- Eureka: 707-476-4280, student services building, 1<sup>st</sup> floor
- Del Norte: 707-465-2324, main building near library
- Klamath-Trinity: 530-625-4821 Ext 103

During COVID19, approved accommodations for distance education classes will be emailed to the instructor by DSPS. In the case of face to face instruction, please present your written accommodation

request to your instructor at least one week before the first test so that necessary arrangements can be made. Last-minute arrangements or post-test adjustments cannot usually be accommodated.

### **Astronomy 10 Class Schedule**

Wednesday, June 1, Class begins

Monday, June 13, Monday July 4, **No Class**

Monday, June 27, Paper Due

### **Astronomy 10 Topics/Outline**

Online open textbook: <https://openstax.org/details/books/astronomy>

Class videos on Youtube: <https://www.youtube.com> , Search Redwoodsastronomy (37 videos)

Video 1, Meteorite ALH84001, Mars Life?: <https://www.youtube.com/watch?v=5sQ-y3BVB8A>

Video 2, Asteroids: Deadly Impact: <https://www.youtube.com/watch?v=xT2ywken1SU>

Or 6 part video starts: [https://www.youtube.com/watch?v=j9ZnQ9TL\\_RA](https://www.youtube.com/watch?v=j9ZnQ9TL_RA)

<u>Class</u>	<u><b>Due@6PM</b></u>	<u>Unit#</u>	<u>Topic</u>	<u>Openstax Chapter</u>	<u>Youtube video</u>
W 6/1 F 6/3		1	Search for Life, ALH84001	Video 1	1
		1	Requirements for Life	30.1-30.4	2
M 6/6 W 6/8		2	Scientific Method	---	3
		2	Mass, Distance, Temp	1.4, Appendix C&D	4
		2	Light-year, Calendar	4.4, 1.4, 1.6, 1.5	5, 6
W 6/8 F 6/10		3	Night Sky, RA/Dec	2.1, 4.1	7
		3	Seasons	4.2	8
		3	Moon Phases, Eclipses	4.5, 4.7	9
W 6/15 F 6/17		4	Geocentrism vs. Heliocentrism	2.2, 2.4	10, 11
		4	Galileo	2.4	12, 13
		4	Kepler and Newton	3.1, 3.3, 3.4	14, 15
M 6/20 W 6/22		5	Nature of Light and EM Spectrum.	5.1, 5.2	16, 17
		5	Telescopes	6.1, 6.2	18, 19
		5	Temperature/Color, Spectroscopy.	5.2, 5.3	20, 21
		5	Doppler Effect	5.6	22
W 6/22 F 6/24		6	Big Bang, Galaxies	29.6, 29.3, 29.1-2	23, 24
		6	Solar System Formation	7.4, 21.1, 21.3, 14.3	25

	6	Asteroids and Density	Video 2, 8.5, 7.1	26
M 6/27	7	Earth, <b>Paper Due</b>	8.1-8.4	27
W 6/29 F 7/1	7	Moon	9.1-9.4	28
W 7/6 F 7/8	8	Terrestrial Planets	9.5, 10.1-10.6	29
M 7/11 W 7/13	9	Jovian Planets	11.1-3, 12.1-3, 12.5	30
W 7/13 F 7/15	10	The Sun, Thermonuclear Fusion	15.1-15.4, 16.2-16.4	31, 32
M 7/18 W 7/20	11	Distance, Luminosity of Stars	19.2, 17.1	33
	11	H-R Diag, Mass, Spectral Class.	18.2, 18.3, 17.3, 18.4	34
W 7/20 Th 7/21	12	Stars, Beginning of the End	21.2, 22.1, 22.4	35
	12	White Dwarfs, Planetary Nebula	22.4, 23.1	36
	12	Supernovae and Black Holes	23.2-4, 24.5, 24.6	37

### Research Essay Requirements

**Topic:** Of your own choosing related to class material. I would suggest consulting the internet for ideas.

Some good places to start are [www.nasa.gov](http://www.nasa.gov) , [www.spacedaily.com](http://www.spacedaily.com) , [www.space.com](http://www.space.com) , [www.planetary.org](http://www.planetary.org) , [www.spaceweather.com](http://www.spaceweather.com), and [www.jpl.nasa.gov](http://www.jpl.nasa.gov) .

**Length:** 2-3 typed pages (750 word minimum), excluding figures and list of references.

**Sources:** Minimum Three (3) sources other than encyclopedias and textbook. I encourage you to use the web or recent periodicals as sources. Many books are out of date as the field of astronomy changes quickly.

**Required:** Essay, References (footnotes), Reference List (bibliography).

**Due Date:** Monday, June 27, 2022.

**Late Penalty:** Due at 6 PM, one grade lower every two days late.

**Note:** **Bibliography** should be a list of all sources you have consulted with full information given about each. Normally this includes title, author, publisher, page numbers, year, etc. Internet sites should be listed with their site address (i.e. <http://www.....>). To simplify, you might list each site as site 1, site 2, etc., and then reference them in that way in the text of your paper.

You should directly **reference** any idea, fact, or quotation that is not your own or common knowledge (i.e. 'the Earth is round' does not need a reference). You are free to use any reference style you would like (MLA, APA). The simplest style includes the author's name or title and the page number or the website (site 1, site 2, etc) following the referenced fact, quote, or idea in parentheses.

**An example:** The meteoritic impact in the Yucatan peninsula is believed to have led to the extinction of the dinosaurs. (Kring, 1993) or (site 1)

