COLLEGE OF THE REDWOODS

Syllabus for Astronomy 10

Course Information

Semester & Year: Spring 2025
Course ID & Section #: Astro 10 (E7578)
Instructor's name: Dr. Jon Pedicino
Day/Time/Location: MW 10:05-11:30 AM, Hum 129
Course units: 3.0

Instructor Contact Information

Office hours: MW 9:00-10:00, Hum 209
Email address: jon-pedicino@redwoods.edu

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 Fridays, 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%)

Educational Accessibility & Support

College of the Redwoods is committed to providing reasonable accommodations for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, bipolar disorder, and ADHD
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders, and diseases
- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- A learning disability (such as dyslexia, reading comprehension), intellectual disability, autism, or acquired brain injury
- Vision, hearing, or mobility challenges

Available services include extended test time, quiet testing environments, tutoring, counseling and advising, alternate formats of materials (such as audio books or E-texts), assistive technology, on-campus transportation, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact Student Accessibility Support Services (SASS). If you are unsure whether you qualify, please contact SASS for a consultation: sass@redwoods.edu.

SASS office locations and phone numbers

Eureka campus

- Phone: 707-476-4280
- Location: Student Services Building, first floor

Del Norte campus

- Phone: 707-465-2324
- Location: Main Building, next to the library

Klamath-Trinity campus

- Phone: 707-476-4280

Astronomy 10 Class Schedule

Wednesday, January 22, Class begins

Monday, February 17, March 31, **Holidays, No Class**

Monday-Friday, March 17-21, **Spring Break, No Class**

Friday, April 4, Paper due

Astronomy 10 Topics/Outline

Online open textbook: https://openstax.org/details/books/astronomy-2e

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

Week #	Unit#	Topic	Openstax Chapter	Youtube video
1	1	Search for Life, ALH84001	Video 1, 30.1-30.4	1, 2
2	1	Search for Life		
3	2	Scientific Method	1.2	3
3	2	Mass, Distance, Temp	1.4, Appendix C&D	4
3	2	Light-year, Calendar	4.4, 1.4, 1.6, 1.5	5, 6
4	3	Night Sky, RA/Dec	2.1, 4.1	7
4	3	Seasons	4.2	8
4	3	Moon Phases, Eclipses	4.5, 4.7	9
5	4	Geocentrism vs. Heliocentrism	2.2, 2.4	10, 11
6	4	Galileo	2.4	12, 13
6	4	Kepler and Newton	3.1, 3.3, 3.4	14, 15
7	5	Nature of Light and EM Spectrum.	5.1, 5.2	16, 17
7	5	Telescopes	6.1, 6.2	18, 19
7	5	Temperature/Color, Spectroscopy.	5.2, 5.3	20, 21
7	5	Doppler Effect	5.6	22
8	6	Big Bang, Galaxies	29.6, 29.3, 29.1-2	23, 24
8	6	Solar System Formation	7.4, 21.1, 21.3, 14.3	25
8	6	Asteroids and Density	Video 2, 8.5, 7.1	26

9	7	Earth	8.1-8.4	27
9	7	Moon	9.1-9.4	28
10	8	Terrestrial Planets, **Paper Due**	9.5, 10.1-10.6	29
11	8	Terrestrial Planets		
12	9	Jovian Planets	11.1-3, 12.1-3, 12.5	30
13	10	The Sun and Thermonuclear Fusion	15.1-15.4, 16.2-16.4	31, 32
14	11	Distance and Luminosity of Stars	19.2, 17.1	33
14	11	H-R Diagram, Mass, Spectral Class.	18.2, 18.3, 17.3, 18.4	34
15	12	Stars, the Beginning of the End	21.2, 22.1, 22.4	35
15	12	White Dwarfs and Planetary Nebula	22.4, 23.1	36
15	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 , www.spacedaily.com , www.space.com , www.planetary.org , www.spaceweather.com, and www.jpl.nasa.gov .

Length: 2-3 typed, double-spaced pages (750+ words), 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 (citations), Reference List (bibliography).

Due Date: Friday, April 4, 2025. (On Canvas)

Late Penalty: Due at class time, 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).