Syllabus for Astronomy 10

Course Information

Semester & Year: Fall 2022
Course ID & Section #: Astro 10 (E3562)
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%)

Accessibility

College of the Redwoods is 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, 1st floor
- Del Norte: 707-465-2324, main building near library
- Klamath-Trinity: 530-625-4821 Ext 103

If you are taking online classes DSPS will email approved accommodations for distance education classes to your instructor. In the case of face-to-face instruction, please present your written accommodation request to your instructor at least one week before the needed accommodation so that necessary arrangements can be made. Last minute arrangements or post-test adjustments usually cannot be accommodated.

Astronomy 10 Class Schedule

Monday, August 22- First day of Class

Monday, September 5 & Wednesday, October 5- **No Class**

Sunday, October 23, Paper due

Monday- Friday, November 21-25- No Class, Holiday Week

Wednesday, December 7- Last day of classes

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

Week #	Unit#	Topic	Openstax Chapter	Youtube video
1	1	Search for Life, ALH84001	Video 1	1
1	1	Requirements for Life	30.1-30.4	2
2	2	Scientific Method	1.2	3
2	2	Mass, Distance, Temp	1.4, Appendix C&D	4
2	2	Light-year, Calendar	4.4, 1.4, 1.6, 1.5	5, 6
3	3	Night Sky, RA/Dec	2.1, 4.1	7
3	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
5	4	Galileo	2.4	12, 13
5	4	Kepler and Newton	3.1, 3.3, 3.4	14, 15
6	5	Nature of Light and EM Spectrum.	5.1, 5.2	16, 17
6	5	Telescopes	6.1, 6.2	18, 19
6	5	Temperature/Color, Spectroscopy.	5.2, 5.3	20, 21
6	5	Doppler Effect	5.6	22
7	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, **Paper Due**	8.1-8.4	27
10	7	Moon	9.1-9.4	28
11	8	Terrestrial Planets	9.5, 10.1-10.6	29
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: Sunday, October 23, 2022. (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)