ASTRON 3L Course Outline as of Fall 1998

CATALOG INFORMATION

Dept and Nbr: ASTRON 3L Title: STELLAR ASTRON LAB
Full Title: Stellar Astronomy Laboratory
Last Reviewed: 10/24/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	0	17.5	Lecture Scheduled	0
Minimum	1.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 0.00 Total Student Learning Hours: 52.50

Title 5 Category: AA Degree Applicable
Grading: Grade or P/NP
Repeatability: 01 - May Be Taken for a Total of 1 Unit
Also Listed As:
Formerly:

Catalog Description:
Stellar astronomy laboratory involves the analysis and reduction of basic astronomical data concerning stars, nebulae, and galaxies. Using photos, spectra, as well as direct planetarium observations, the student will arrive at conclusions concerning fundamental properties of the sidereal universe.

Prerequisites/Corequisites:
Course Completion or Current Enrollment in ASTRON 3

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Stellar astronomy laboratory involves the analysis and reduction of basic astronomical data concerning stars, nebulae, and galaxies. Using photos, spectra, as well as direct planetarium observations, the student will arrive at conclusions concerning fundamental properties of the siderial universe. (Grade or P/NP)
Prerequisites/Corequisites: Course Completion or Current Enrollment in ASTRON 3

Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC.
Repeatability: May Be Taken for a Total of 1 Unit

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B3	Laboratory Activity	Fall 1998	
IGETC:	**Transfer Area**		Effective:	Inactive:
	5C	Fulfills Lab Requirement	Fall 1998	

CSU Transfer:	Transferable	Effective:	Fall 1997	Inactive:
UC Transfer:	Transferable	Effective:	Fall 1998	Inactive:

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course the student will:
1. describe the fundamental properties of electromagnetic radiation and how these properties are used to discover the characteristics of stars, nebulae, and galaxies.
2. explain the observational techniques that are used to compute the distances, temperatures, brightnesses, motions, compositions, and masses of stars.
3. describe the nuclear processes that power the stars.
4. compute the ages of stars from their temperature-magnitude diagrams.
5. compute the distances to star clusters from their temperature-magnitude diagrams.
6. compute the distances to galaxies from the Hubble law.
7. identify the major galactic Hubble types.
8. compute the age of the universe from a knowledge of the Hubble constant.

Topics and Scope:

1. Electromagnetic Radiation
2. Stellar Distances
3. Stellar Motions
4. Stellar Spectra
5. The Magnitudes of Stars
6. The Masses of Stars (Binary Stars)
7. Variable Stars

8. The Hertzsprung-Russell Diagram
9. Stellar Structure and Evolution
10. Life in the Universe
11. The Age of Stars
12. Star Clusters
13. The Interstellar Medium
14. The Galaxy
15. Other Galaxies
16. The Expansion of the Universe
17. The Birth of the Universe
18. The Death of the Universe

Assignment:

Weekly reading assignments in course text.
Weekly laboratory assignments from course text.
Attendance at, and written report on, at least one outdoor observation session.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Lab reports	Problem solving 25 - 50%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances	Skill Demonstrations 25 - 50%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false	Exams 25 - 50%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:

Palmer, Leon. THE TRAINED EYE: AN INTRODUCTION TO ASTRONOMICAL OBSERVING.
Saunders College Publishing, 1990

Robbins, Robert R., Jefferys, William H., and Shawl, Stephen J.
DISCOVERING ASTRONOMY ACTIVITIES MANUAL AND KIT. 3rd Edition, John Wiley & Sons, Inc., 1995.