

South Plains College
Common Course Syllabus: ASTR 1403
Revised August 14, 2023

Department: Science

Discipline: Astronomy

Course Number: ASTR 1403

Course Title: Stars and Galaxies

Available Formats: conventional, dual credit

Campus: Seagraves High School

Course Description: Study of the sun and its solar system, including its origin

Prerequisites: None

Credit: 4 **Lecture:** 3 **Lab:** 3

Instructor: Name: Randall C Presley

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Textbooks:

1. *Universe*, 10th Edition; by Roger Freedman (Author), Robert Geller (Author), William J. Kaufmann (Author); ISBN—1319042384
2. Selected readings will be provided by instructor.

This course partially satisfies a Core Curriculum Requirement:

Life and Physical Sciences Foundational Component Area (030)

Core Curriculum Objectives addressed:

- Communications skills—to include effective written, oral and visual communication
- Critical thinking skills—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- Empirical and quantitative competency skills—to manipulate and analyze numerical data or observable facts resulting in informed conclusions
- Teamwork—to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Student Learning Outcomes: Upon successful completion of this course students will:

- Describe key features of the universe, its scale, our place in it, and the physical principles relevant to astronomy.
- Understand basic principles of physics that allow astronomers to learn about the universe.
- Apply quantitative reasoning to solve a variety of astronomical problems.
- Explain the principles and uses of telescopes in astronomy.
- Describe the classifications and life cycles of stars.
- Explain the basic classification of galaxies in terms of structure.
- Discuss current theories of galaxy formation and evolution.
- Describe the spatial distribution of galaxies within the Universe.
- Describe the evidence for the Big Bang as the origin of the Universe and the methods for estimating the age of the Universe.

- Discuss experimental observations leading to the ideas of Dark Matter and Dark Energy and current theories for explaining these observations.

Course Evaluation: Your will be based on the following weighted averages:

Final Exam	20 %
Midterm Exam	20 %
Homework	30 %
Discussion Boards	30 %

Your homework will include selected questions from the textbook and other assignments provided by the instructor. The discussion boards will include observations from star parties, results of labs, short writing assignments, and other work.

Letter grades will be based on a fixed scale as follows:

- A: 89.5 – 100
- B: 79.5 – 89.5
- C: 69.5 – 79.5
- D: 59.5 – 69.5
- F: below 59.5

Borderline cases (grades within 0.5 points of the break point) will be decided based on class attendance and participation.

Attendance Policy: Attendance and effort are vital to success in this course. Class attendance keeps you well connected to the course, so that you know at all times what is going on, what are the most important points, etc., and gives you opportunities to ask questions and clear up confusions. Therefore, students are expected to be in attendance for every class session. During classes, we will engage in discussions and various activities, some of which may involve completing worksheets. Participation in these activities may affect your final grade.

If you are experiencing any of the following symptoms, please do not attend class and either seek medical attention or test for COVID-19.

- Cough, shortness of breath, difficulty breathing
- Fever or chills
- Muscles or body aches
- Vomiting or diarrhea
- New loss of taste and smell

Please also notify DeEtte Edens, BSN, RN, Associate Director of Health & Wellness, at dedens@southplainscollege.edu or 806-716-2376. Proof of a positive test is required. A home test is sufficient but students must submit a photo of the positive result. The date of test must be written on the test result and an ID included in the photo. If tested elsewhere (clinic, pharmacy, etc.), please submit a copy of the doctor's note or email notification. Results may be emailed to DeEtte Edens, BSN, RN at dedens@southplainscollege.edu.

A student is clear to return to class without further assessment from DeEtte Edens, BSN, RN if they have completed the 5-day isolation period, symptoms have improved, and they are without fever for 24 hours without the use of fever-reducing medication.

Students must communicate with DeEtte Edens, BSN, RN prior to their return date if still symptomatic at the end of the 5-day isolation.

Plagiarism and Cheating: Students are expected to do their own work on all projects, quizzes, assignments, examinations, and papers. Cheating will not be tolerated. If a student is caught cheating on an exam or lab report, a grade of zero will be given for that exam or lab report.

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning. Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

Intellectual Exchange Statement :In South Plains College courses, the instructor will establish and support an environment that values and nurtures individual and group difference and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or email lcleavinger@southplainscollege.edu for assistance.

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry, please visit <https://www.southplainscollege.edu/syllabusstatements/>.

Course Schedule: All material is subject to change. Also, all dates are subject to change. Changes will be announced if necessary.

Week	Topic	Reading	Homework	Discussion Boards
1 Aug 28	Astronomy is the Oldest Science	Chp 2	2.1, 2.2, 4.1, 4.5, 4.20	Scale Model of Solar System Reading—Archaeoastronomy and ethnoastronomy

2 <i>Sep</i> 4	Universal Gravity		Calculating Gravity of Jupiter Web #1	Calculating Gravity of Earth and Moon with Pendulums
3 <i>Sep</i> 11	Nature of Light	Chp 5	5.31, 5.41, 5.42 Web #2 Web #3	Renaissance Painting DIY–Spectroscope
4 <i>Sep</i> 18	Nature of Stars	Chp 17	17.1, 17.5 17.9, 17.10, 17.50	Celestial Dome Motion of Constellation 1 Reading–Why Astrology is not a Science
5 <i>Sep</i> 26	Hertzsprung-Russell Diagram	Chp 17-7	17.19, 17.26, 17.45	Star Power H-R Graphing
6 <i>Oct</i> 2	Birth of Stars	Chp 18	18.2, 18.4, 18.15, 18.25, 18.28	Exploring Dust
7 <i>Oct</i> 9	On and After the Main Sequence	Chp 19	19.10, 19.16, 19.36, 19.40, 19.54	Reading–Our Cosmic Selves Eclipse (Oct 14 at 11:15 am)
8 <i>Oct</i> 16	Midterm Week Midterm Exam			Motion of Constellation 2
9 <i>Oct</i> 23	Death of Stars	Chp 20	20.7, 20.11, 20.15, 20.30, 20.41	Supernova Remnants
10 <i>Oct</i> 30	Black Holes	Chp 21	21.25, 21.32, 21.47, 21.48	Exploring Black Holes Evening observations (Oct 30)
11 <i>Nov</i> 6	Our Galaxy	Chp 22	22.1, 22.19, 22.24, 22.25	Scale Model of Galaxy
12 <i>Nov</i> 13	Galaxies	Chp 23	23.8, 23.12, 23.18, 23.27, 23.40	Galaxy Classification Evening Observations (Nov 13)
13 <i>Nov</i> 20	Thanksgiving Week			

14 <i>Nov</i> <i>27</i>	The Big Bang Theory	Chp 25	25.7, 25.10, 25.14, 25.16, 25.38 Web #5	Evidence of the Big Bang
15 <i>Dec</i> <i>4</i>	Astrobiology– Exoplanets and Habitability			Habitable Planets Data Analysis Reading–A Biologist’s view of Astrobiology
16 <i>Dec</i> <i>11</i>	Finals Week Final Exam			