South Plains College
Common Course Syllabus: ASTR 1403
Revised 08/19/2024

Department: Science

Discipline: Astronomy

Course Number: ASTR 1403

Course Title: Stars and Galaxies

Available Formats: Fully Online

Campuses: Online, Online Dual Credit

Instructor:
David Hobbs
Office: Levelland Campus Science Building, S67
Office Hours: MW 1:00 – 2:00 pm, TT 1:30 – 3:30 pm, F 1:00 – 3:00 pm
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Course Description: Study of Stars, Galaxies, and the Universe outside our Solar System

Prerequisite: There are no prerequisites for this course, however you will be expected both on the homework and in the exams to be able to perform simple mathematical calculations. Examples of the mathematical concepts we will use in this course are scientific notation, multiplying and dividing powers of 10, converting between different metric units, rearranging and solving simple equations. It will be assumed that you are proficient with high school algebra.

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

Textbook: *The Essential Cosmic Perspective, 9th Edition* by Bennett et al. (Pearson, 2022).
The textbook and Mastering Astronomy learning platform will be available through Blackboard.

Supplies: Scientific Calculator

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:

1. Describe key features of the universe, its scale, our place in it, and the physical principles relevant to astronomy.
2. Understand basic principles of physics that allow astronomers to learn about the universe.
3. Apply quantitative reasoning to solve a variety of astronomical problems.
4. Describe the classifications and lifecycles of stars.
5. Explain the basic classification of galaxies in terms of structure.
6. Discuss current theories of galaxy formation and evolution.
7. Describe the spatial distribution of galaxies within the Universe.
8. Describe the evidence for the Big Bang as the origin of the Universe and the methods for estimating the age of the Universe.
9. Discuss experimental observations leading to the ideas of Dark Matter and Dark Energy and current theories for explaining these observations.

Student Learning Outcomes Assessment: Selected questions on tests will assess how well students have met targeted student learning outcomes.

Course Evaluation: Student grades will be based on daily work and tests. Final grades will be assigned based on the percentages shown below:

Task	Weight
Daily Work	40%
Tests	60%

The 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 (within 0.5 of the break) will be decided based on course participation.

Late Work: Any assignment (except tests) submitted after the due date will be accepted for partial credit. The score on late assignments will be reduced by 10% for each day late.

Extra Credit: This course will not include any extra credit opportunities.

Attendance Policy: Attendance and effort are vital to success in this course. Attendance (logging into the course several times each week) keeps you well connected to the course and gives you opportunities to ask questions and clear up confusions. Therefore, students are expected to log into the course a minimum of 2 to 3 times each week. Students who go long stretches without working on the course should not be surprised if they find themselves performing poorly in the course.

Dropping a Course: Students may drop courses through Texan Connect, the Admissions and Records Office, or Advising and Testing Center through the late registration period.

After late registration has closed, a student must complete the online Student Initiated Drop Request to drop a course.

Students may also drop courses in person at any campus location by completing a Student Initiated Drop Form. Complete a Student Initiated Drop Form and return the signed form to the Levelland Admissions and Records Office, the Student Support Center at the Lubbock Downtown Center, the Lubbock Career and Technical Center, or Plainview Center. You must have a picture ID to complete the drop.

A mark of "W" will be given for student-initiated drops that occur prior to and through the last day to drop as indicated in the online Academic Calendar found here: https://www.southplainscollege.edu/academiccalendar/index.php.

Daily Work: Daily work consists of all online work in Blackboard such as video and tutorial follow-up questions, projects, chapter quizzes, etc. These activities are meant to be formative exercises and generally allow multiple attempts to get correct answers. For example, video and tutorial follow-up questions allow six response attempts on each question. Chapter quizzes allow only one response per question, but each quiz can be attempted three times with the highest grade counted. Their purpose is to help develop understanding of the concepts and principles and to prepare you for the tests. Your semester daily work average will be 40% of the course grade.

Tests: Three tests will be given during the semester. Each of the three tests will be worth 20% of the course grade. There will be no make-up tests given, so a test missed counts as zero. However, if the student can provide appropriate documentation for serious medical issues that resulted in the missed test, making up the test is possible. **If you miss a test for trivial reasons, you will not be able to make up the test – the test missed due to trivial reasons will be a zero counted toward your course grade. Issues with your computer or your internet connection are considered trivial – it is up to you to ensure proper online access for the tests.** In other words, missing a test should only be for serious unavoidable medical issues and should not be for other trivial reasons. You should notify the instructor **before** the missed test, if at all possible. In any case, you must notify the instructor of the reason for missing the test within 48 hours of the test due date. Failure to make this notification means making up the test will not be allowed under any circumstances. Proper documentation must be provided before the make-up test will be scheduled.

Can I get the grade I really want?
Yes – but it will depend on your effort. It does not matter whether you have even learned anything about astronomy before or whether you are "good" in science. What does matter is your willingness to work hard. Astronomy is a demanding course, in which we will move quickly and each new topic will build on concepts covered previously. If you fall behind at any time, you will find it extremely difficult to get caught back up. If you want to get a good grade in this class, be sure to pay special attention to the following:

- Carefully read the section in your textbook called "How to Succeed in Your Astronomy Course." It describes how much time you should expect to spend studying and lists a number of useful suggestions about how to study efficiently.
- When you turn in assignments of any kind, make sure they are done clearly and carefully as described in the "How to Succeed" subsection called "Presenting Homework and Writing Assignments".
- Don't procrastinate. The assignments will take you several hours, so if you leave them to the last minute, you'll be in trouble—and it will be too late for you to ask for help. Both quizzes and other assignments need to be completed on time to earn full credit.
- Log in to the course and work on assignments multiple days each week, completing the work by the due date. Online classes require you to consistently work on them. Going long stretches without working in the course would be like missing class in a face-to-face class, and always hurts your chances of succeeding in the class.

- Don't be a stranger to your instructor—check in with me and let me know how you're doing, even if you don't have any specific questions.
- If you find yourself confused or falling behind for any reason at any time, let me know immediately! No matter what is causing your difficulty, I am quite willing to work with you to find a way for you to succeed—but I can't help if I don't know there's a problem.

All the hard work described above might sound a bit intimidating, but I can make you this promise: Few topics have inspired humans throughout the ages as much as the mysteries of the heavens. This class offers you the opportunity to explore these mysteries in depth, learning both about our tremendous modern understanding of the universe and about the mysteries that remain. If you work hard and learn the material well, this class will be one of the most rewarding classes of your college career.

Syllabus Statements: For information about Artificial Intelligence, Disabilities, Non-Discrimination, Intellectual Exchange, Title IX Pregnancy Accommodations, CARE (Campus Assessment, Response, and Evaluation) Team, Campus Concealed Carry, and COVID-19, please use this link: https://www.southplainscollege.edu/syllabusstatements/.

Plagiarism and Cheating: Students are expected to do their own work on all projects, quizzes, assignments, examinations, and papers. Failure to comply with this policy may result in an F (grade of zero) for the assignment and can result in an F or X for the course, if circumstances warrant.

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

1. Submitting work that has been purchased, borrowed, or downloaded from another student or an online term paper site.
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.
5. Violating the Artificial Intelligence policy, as outlined in the syllabus. For more information on AI, please reference this in the syllabus statements: https://www.southplainscollege.edu/syllabusstatements/

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.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

Calendar

Astr 1403 Fall 2024

Unit	Week	Material Covered	Due Date
Unit 1 Developing a Cosmic Perspective	1 08/25 – 08/31	Chapter 1 A Modern View of the Universe	08/31/2024 11:59 pm
	2 09/01 – 09/07	Chapter 2 Discovering the Universe for Yourself	09/07/2024 11:59pm
	3 09/08 – 09/14	Chapter 3 The Science of Astronomy	09/14/2024 11:59pm
Unit 2 Key Physics Concepts for Astronomy	4 09/15 – 09/21	Chapter 4 Making Sense of the Universe: Understanding Motion, Energy, and Gravity	09/21/2024 11:59pm
	5 09/22 – 09/28	Chapter 5 Light and Telescopes: Reading Messages from the Cosmos	09/28/2024 11:59pm
	6 09/29 – 10/05	***Unit 1 and 2 Review and Test***	10/05/2024 11:59pm
Unit 3 Stars	7 10/06 – 10/12	Chapter 11 Our Star	10/12/2024 11:59pm
	8 10/13 – 10/19	Chapter 12 Surveying the Stars	10/19/2024 11:59pm
	9 10/20 – 10/26	Chapter 13 Star Stuff	10/26/2024 11:59pm
	10 10/27 – 11/02	Chapter 14 The Bizarre Stellar Graveyard	11/02/2024 11:59pm
	11 11/03 – 11/09	***Unit 3 Review and Test***	11/09/2024 11:59pm
Unit 4 Galaxies	12 11/10 – 11/16	Chapter 15 Our Galaxy	11/16/2024 11:59pm
	13 11/17 – 11/23	Chapter 16 A Universe of Galaxies	11/23/2024 11:59pm
Unit 5 Cosmology	14 11/24 – 11/30	Chapter 17 The Birth of the Universe	11/30/2024 11:59pm
	15 12/01 – 12/07	Chapter 18 Dark Matter, Dark Energy, and the Fate of the Universe	12/07/2024 11:59pm
	16 12/08 – 12/14	***Unit 4 and 5 Review and Test***	12/11/2024 11:59pm

This schedule may be subject to change. Any necessary changes will be announced through Blackboard.