

**South Plains College
Common Course Syllabus: ASTR 1403
Revised Fall 2025**

Department: Science
Discipline: Astronomy
Course Number: ASTR 1403
Course Title: Stars and Galaxies
Available Formats: Online
Campuses: Online, Online Dual Credit

Instructor: Dr. Kim Bouldin
Office: S70 Levelland campus
Office hours: MW 12:30-1pm, 3:45-4:00pm,
TTh 10-11am & 12:30-1pm, 3:45-4:00, F 9am-noon
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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 on 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 familiar with high school algebra.

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

Course Textbook: The Essential Cosmic Perspective, 9th Edition by Bennett, Donahue, Schneider, and Voit. Students will also need the online code for Pearson's Mastering Astronomy.

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 shall be able to:

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.

Course Evaluation:**Breakdown of Grading:**

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|--------------|-----|
| Homework | 20% |
| Quiz average | 20% |
| Exam 1 | 20% |
| Exam 2 | 20% |
| Final | 20% |

Grading scale:

100---A---90, 89---B---80, 79---C---70, 69---D---60, 59---F---0

Note: Final grades will be calculated using the breakdown above.

(Late Work will not be accepted. Bonus points may be given for assignments and activities that are considered above and beyond course requirements. *Students are strongly encouraged to attempt all bonus assignments.* Bonus points will be added to Quiz 1 at the end of the semester.)

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.

Computer/Software requirements

Minimum Computer Requirements:

1. Personal computer with a 1 GHz Pentium processor and at least 512 MB of RAM memory, a minimum 5 GB of free hard drive, running Windows 7 / MacOS 10.8 or later (Windows 10 / MacOS 10.12 recommended).
2. Web Browser: Google Chrome seems to work the best with Blackboard and HOL.
3. A high speed internet connection of 5+ Mbps.
4. Microsoft Office and Microsoft PowerPoint and Word software (a recent version, preferably 2016 or higher).
5. Windows Media Player (the latest version).
6. Soundcard and functioning speakers.
7. Knowledge of how to navigate Google Chrome web pages and how to deal with pop-up blockers and other devices and warnings on Google Chrome.
8. Knowledge of how to download files from the Google Chrome and find them on your computer once they are downloaded.
9. Knowledge of basic operations of Microsoft Word and Microsoft PowerPoint.
10. Knowledge of how to view and adjust videos with Windows Media Player.

Additional notes on technology:

I will respond to individual emails as quickly as I can. If you send me something through email, and you do not receive a response within 1 business day, please resend it. I will always at least touch base with you within a 1-day time period unless I am ill. Also, a student will not be punished in the event that Blackboard or an SPC server is down when an assignment is due. (Note: This does not apply to your own server or computer having issues!) If you need to print, turn something in, or access something online, please try to do so ahead of time and not at the last minute in order to avoid this situation.

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/>.

ASTR 1403 Stars and Galaxies Schedule Fall 2025

(Some of the scheduled activities are weather dependent and subject to change accordingly.)

(Note: All HW assignments will be posted in the Blackboard folder for that chapter. Assignments will always be due at 11pm on the night of the due date.)

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| Week 1 August 25-29 Register for Mastering Astronomy HW 1 Ch 11, due Sept 8 | Week 9 October 20-24 HW 6 Ch 16, due Nov 3 |
| Week 2 September 2-5 (<i>Labor Day Sept 1, Campus Closed</i>) HW 2 Ch 12, due Sept 15 | Week 10 October 27-31 Quiz 2 over Ch 15-16, due Nov 10 |
| Week 3 September 8-12 Quiz 1 over Ch 11-12, due Sept 22 | Week 11 November 3-7 HW 7 Ch 17, due Nov 17 |
| Week 4 September 15-19 HW 3 Ch 13, due Sept 29 | Week 12 November 10-14 HW 8 Ch 18, due Nov 24 |
| Week 5 September 22-26 HW 4 Ch 14, due Oct 6 | Week 13 November 17-21 Observation Lab 2, due Dec 1 *2 nd Sky Observation Session (+10 Bonus) |
| Week 6 September 29-October 3 Observation Lab 1, due Oct 13 *1 st Sky Observation Session (+10 Bonus) | Week 14 November 24-25 (<i>Thanksgiving break Nov 26-30</i>) HW 9 Ch 19, due Dec 5 (Note due date is Friday, not Monday) |
| Week 7 October 6-10 Exam 1 over Ch 11-14, due Oct 12 (Note due date is Sunday, not Monday) | Week 15 Dec 1-5 Exam 2 over Ch 15-19, due Dec 7 (Note due date is Sunday, not Monday) |
| Week 8 October 13-16 (<i>Oct 17 Fall Break Holiday</i>) HW 5 Ch 15, due Oct 27 | Final exam will be posted on Blackboard at 8am on December 8. It will be due by 11pm on December 9. Students will be given 2 hours to complete the exam once they begin it. |