

**South Plains College
Common Course Syllabus: ASTR 1404
Revised Spring 2025**

Department: Science
Discipline: Astronomy
Course Number: ASTR 1404
Course Title: Solar System
Available Formats: Online
Campuses: Levelland

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 the sun and its solar system, including its origin

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. Compare and contrast objects in the Solar System based on their features.
2. Explain Earth's motion in space, including both rotation and revolution.
3. Show how the relative motions of the Earth, Moon, and Sun lead to eclipses.
4. Model phases of the moon and explain how the phases come about.
5. Visualize the way in which the Earth's motion around the Sun produces retrograde motion in other planets.
6. Understand tides and tidal forces.
7. Describe why the Earth has seasons.
8. Identify the Sun's features and explain the Sun's effects on the Solar System.
9. Understand how the Sun produces energy.
10. Develop an understanding of the size/scale of the Solar System and learn to model different aspects of the Solar System.
11. Explain basic physics principles involved in our Solar System, including Conservation of Energy and Conservation of Momentum.
12. Learn about different types of telescopes, their main parts, and how to use them.

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 the Quiz average at the end of the semester.)

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. 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 1404 Solar System Tentative Schedule Spring 2025

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

Note: Dates are locked in for all items in bold.

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| <p>Week 1 Jan 13-17 Introduction Work on getting textbook and registering for Mastering Astronomy HW 1, due Jan 20 (All HW assignments will be posted in the Blackboard folder for that chapter.)</p> | <p>Week 9 March 10-14 Ch 6 HW 7, due March 24 (March 17-21 Spring Break, no classes)</p> |
| <p>Week 2 Jan 21-24 Ch 1 (Jan 20 MLK Day) HW 2, due Jan 27</p> | <p>Week 10 March 24-28 Ch 7 HW 8, due March 31</p> |
| <p>Week 3 Jan 27-31 Ch 2 HW 3, due Feb 3 *1st Sky Observation Session (+10 Bonus)</p> | <p>Week 11 March 31-April 4 Quiz 2 over Ch 6-7</p> |
| <p>Week 4 Feb 3-7 Ch 3 HW 4, due Feb 10</p> | <p>Week 12 April 7-11 Ch 8 HW 9, due April 14</p> |
| <p>Week 5 Feb 10-14 Quiz 1 over Ch 1-3</p> | <p>Week 13 April 14-17 Ch 9 (April 18 Easter Break) HW 10, due April 21</p> |
| <p>Week 6 Feb 17-21 Ch 4 HW 5, due Feb 24</p> | <p>Week 14 April 21-25 Ch 10 HW 11, due April 28</p> |
| <p>Week 7 Feb 24-28 Ch 5 HW 6, due March 3</p> | <p>Week 15 April 28-May 2 Exam 2 over Ch 6-10</p> |
| <p>Week 8 March 3-7 Exam 1 over Ch 1-5 *2nd Sky Observation Session (+10 Bonus)</p> | <p>Final exam will be posted on Blackboard at 8am on May 5. It will be due by midnight on May 7. Students will be given 2 hours to complete the exam once they begin it.</p> |