

**South Plains College
Common Course Syllabus: ASTR 1404
Revised Spring 2024**

Department: Science
Discipline: Astronomy
Course Number: ASTR 1404
Course Title: Solar System
Available Formats: Face-to-face
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
Office phone number: 806-716-2950
Email: KBouldin@southplainscollege.edu

SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE.

Course Room: S65
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

Supplies: Students will each need a three ring binder, a spiral notebook or loose leaf paper that will fit inside the binder, a notecard or notecards no larger than 3" by 5", a calculator (not a phone), and writing utensils. For the outdoor activities, students may want an outdoor blanket or lawn chair.

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.

Student Learning Outcomes Assessment: A pre- and post-test will be used to determine the extent of improvement that the students have gained during the semester.

Course Evaluation:

Breakdown of Grading:

Quiz average	10%
Lab exercises/homework	10%
Exam 1	25%
Exam 2	25%
Midterm	25%
Final	5%

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.

(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.*)

Attendance Policy:

Attendance in this class will be taken from completed assignments. Everything done face-to-face in class will be recorded and posted on Blackboard. If a student feels ill with ANY symptoms of COVID-19, the student will be required to stay home and complete the assignments for the day at home.

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.

You should always check Blackboard before coming to class in order to make sure that class has not been cancelled due to the instructor's illness.

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. I will always send a reply email when an assignment is sent through email to let the student know that I have received it. If you send me something through email, and you do not receive a response within 2 school days, please resend it. I will always at least touch base with you within a 2-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 2024

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

<p>Week 1 Jan 17 Introduction Work on getting textbook, read How to Succeed in Your Astronomy Course and Foreword: The Meaning of The Cosmic Perspective from the textbook.</p>	<p>Week 9 March 18, 20 Ch 6 Lab 7—Solar System Flip Books, Kahoot game HW Ch 5 is due March 20</p>
<p>Week 2 Jan 22, 24 Ch 1 Lab 1—Scale of the Solar System and Our Expanding Universe</p>	<p>Week 10 March 25, 27 Ch 7 Lab 8—Geological activity and features Quiz 1 over Ch 5-6 HW Ch 6 is due March 27</p>
<p>Week 3 Jan 29, 31 Ch 2 Lab 2—Understanding Phases of the Moon, Elliptical Orbits, Eclipses, and Seasons HW Ch 1 due Jan 31</p>	<p>Week 11 April 1, 3 Ch 8 Lab 9—Density, Hot Air Balloon lab HW Ch 7 is due April 3</p>
<p>Week 4 Feb 5, 7 Ch 3 Discuss Midterm projects and choose topics Lab 3—Nova: The Great Math Mystery HW Ch 2 due Feb 7</p>	<p>Week 12 April 8, 10 Ch 9 Review for Exam 2 on April 10 *Solar Eclipse on April 8 HW Ch 8 is due April 10</p>
<p>Week 5 Feb 12, 14 Ch 4 Lab 4—Force, Energy, Rotation HW Ch 3 is due Feb 14</p>	<p>Week 13 April 15, 17 Ch 10 Exam 2 over Ch 5-9 on April 15 HW Ch 9 is due April 15 Midterm Papers due by noon on April 17</p>
<p>Week 6 Feb 19, 21 Ch 4 cont Lab 5—Gravity, Free fall, Tides HW Ch 4 is due Feb 21</p>	<p>Week 14 April 22, 24 Midterm presentations Day 1 and 2 HW Ch 10 due April 24 *Second outdoor viewing session</p>
<p>Week 7 Feb 26, 28 Review for Exam 1 on Feb 26 *First outdoor viewing session Exam 1 over Ch 1-4 on Feb 28</p>	<p>Week 15 April 29, May 1 Midterm presentations Day 3 Open note Quiz 2 over Midterm Projects on May 1 Review for Final Exam Select topics</p>
<p>Week 8 March 4, 6 Ch 5 Lab 6—Light and Waves (Spring Break March 11-15)</p>	<p>Final exam will be in class from 10:15am-12:15pm on Monday, May 6.</p>