

**South Plains College**  
**Common Course Syllabus: ASTR 1404**  
**Revised Spring 2022**

**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, R228 Reese campus

**Office hours:** MW 12:30-1pm Levelland, 2-2:30 Reese (R228),  
TTh 10-11am & 12:30-1pm (Levelland), F 9am-noon (Levelland)

**Office phone number:** 806-716-2950

**Email:** [KBouldin@southplainscollege.edu](mailto: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 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 familiar with high school algebra.

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

**Course Textbook:** The Essential Cosmic Perspective, 8<sup>th</sup> 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. Be able to compare and contrast objects in the Solar System based on their features.
2. Be able to 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.

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first-class meeting.

Students who enroll in a course but have never attended by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records.

It is the student's responsibility to verify administrative drops for excessive absences. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate, and the student will owe any balance resulting from the adjustment.

**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 even 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.

## **Academic Integrity**

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. Classroom behavior that is not conducive to learning will be dealt with according to the guidelines set forth on the South Plains College Catalog. The attempt of any student to present as his or her own work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

**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.

**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.

**Disabilities 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.

**Non-Discrimination 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 [rcanon@southplainscollege.edu](mailto:rcanon@southplainscollege.edu) for assistance.

**Campus Concealed Carry Statement**

Texas Government Code 411.2031 et al. authorizes the carrying of a concealed handgun in South Plains College buildings by individuals and in accordance with Texas Government Code 411.209 (a). All holders of a valid Texas License to Carry may carry on their person a handgun that is concealed in accordance with Texas Penal Code 46.03 (a-2).

Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy. Individuals may not carry a concealed handgun in restricted locations.

For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: <http://www.southplainscollege.edu/campuscarry.php>

Report violations to the College Police Department at 806-716-2396 or 9-1-1.

## ASTR 1404 Solar System Tentative Schedule Spring 2022

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

<p>Week 1 Jan 19 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 21, 23 Ch 6 Lab 7—Solar System Flip Books, Kahoot game HW Ch 5 is due March 23</p>
<p>Week 2 Jan 24, 26 Ch 1 Lab 1—Scale of the Solar System and Our Expanding Universe</p>	<p>Week 10 March 28, 30 Ch 7 Lab 8—Geological activity and features <b>Quiz 1</b> over Ch 5-6 HW Ch 6 is due March 30</p>
<p>Week 3 Jan 31, Feb 2 Ch 2 Lab 2—Understanding Phases of the Moon, Elliptical Orbits, Eclipses, and Seasons HW Ch 1 due Feb 2</p>	<p>Week 11 April 4, 6 Ch 8 Lab 9—Density, Hot Air Balloon lab HW Ch 7 is due April 6</p>
<p>Week 4 Feb 7, 9 Ch 3 <b>Discuss Midterm projects and choose topics</b> Lab 3—Nova: The Great Math Mystery HW Ch 2 due Feb 9</p>	<p>Week 12 April 11, 13 Ch 9 Review for Exam 2 on April 13 *Second outdoor viewing session HW Ch 8 is due April 13</p>
<p>Week 5 Feb 14, 16 Ch 4 Lab 4—Force, Energy, Rotation HW Ch 3 is due Feb 16</p>	<p>Week 13 April 18, 20 Ch 10 <b>Exam 2 over Ch 5-9 on April 18</b> HW Ch 9 is due April 18 <b>Midterm Projects due by 5pm on April 20</b></p>
<p>Week 6 Feb 21, 23 Ch 4 cont Lab 5—Gravity, Free fall, Tides HW Ch 4 is due Feb 23</p>	<p>Week 14 April 25, 27 <b>Midterm presentations Day 1 and 2</b> HW Ch 10 due April 27 *Third outdoor viewing session</p>
<p>Week 7 Feb 28, March 2 Review for Exam 1 on Feb 28 *First outdoor viewing session <b>Exam 1 over Ch 1-4 on March 2</b></p>	<p>Week 15 May 2, 4 <b>Midterm presentations Day 3</b> <b>Open note Quiz 2 over Midterm Projects on May 4</b> Review for <b>Final Exam</b></p>
<p>Week 8 March 7, 9 Ch 5 Lab 6—Light and Waves (Spring Break March 14-18)</p>	<p>A take-home <b>Final Exam</b> will be posted online on Blackboard by 8am on the morning of May 9 and will be due by midnight on May 9.</p>