South Plains College
Common Course Syllabus: ASTR 1404
Revised Spring 2021

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

Instructor: Dr. Kim Bouldin
Office: TA227 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).
Zoom session available on Fridays by appointment.
Office phone number: 806-716-2950
Email: KBouldin@southplainscollege.edu

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Course Room: TA218
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, 8th 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. Any total grade given by Blackboard before the end of the semester means nothing. If you want to know what your total grade is at any time during the semester, please ask your instructor. (**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.
It is the policy of South Plains College for the Spring 2021 semester that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the SPC community. Such behaviors specifically include the requirement that all students properly wear CDC-compliant face coverings while in SPC buildings including in classrooms, labs, hallways, and restrooms. Failure to comply with this policy may result in dismissal from the current class session. If the student refuses to leave the classroom or lab after being dismissed, the student may be referred to the Dean of Students on the Levelland campus or the Dean/Director of external centers for Student Code of Conduct Violation. Students who believe they have been exposed or may be COVID-19 positive, must contact Health Services, DeEtte Edens, BSN, RN at (806) 716-2376 or dedens@southplainscollege.edu.

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 Crystal Gilster, Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. 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, license holders 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: https://www.southplainscollege.edu/campuscarry.php

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

ASTR 1404 Solar System Tentative Schedule Spring 2021

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

Week 1 Jan 20 Online Introduction Work on getting textbook, read How to Succeed in Your Astronomy Course and Foreword: The Meaning of The Cosmic Perspective from the textbook.	Week 9 March 22, 24 Ch 6 Lab 7—Solar System Flip Books, Kahoot game HW Ch 5 is due March 24
Week 2 Jan 25, 27 Ch 1 Lab 1—Scale of the Solar System and Our Expanding Universe	Week 10 March 29, 31 Ch 7 Lab 8—Geological activity and features **Quiz 1** over Ch 5-6 HW Ch 6 is due March 31
Week 3 Feb 1, 3 Ch 2 Lab 2—Understanding Phases of the Moon, Elliptical Orbits, Eclipses, and Seasons HW Ch 1 due Feb 3	Week 11 April 5, 7 Ch 8 Lab 9—Density, Hot Air Balloon lab HW Ch 7 is due April 7
Week 4 Feb 8, 10 Ch 3 **Discuss Midterm projects and choose topics** Lab 3—Nova: The Great Math Mystery HW Ch 2 due Feb 10	Week 12 April 12, 14 Ch 9 Lab 10A—Sky Viewing Lab 1 Review for **Exam 2** HW Ch 8 is due April 14
Week 5 Feb 15, 17 Ch 4 Lab 4—Force, Energy, Rotation HW Ch 3 is due Feb 17	Week 13 April 19, 21 Ch 10 **Exam 2** over Ch 5-9 Lab 10B—Sky Viewing Lab 2 HW Ch 9 is due April 21 **Midterm Projects due by 5pm on April 21**
Week 6 Feb 22, 24 Ch 4 cont Lab 5—Gravity, Free fall, Tides Review for **Exam 1**	Week 14 April 26, 28 Lab 10C—Sky Viewing Lab 3 HW Ch 10 due April 28 **Bonus book reports due by April 28.**
Week 7 March 1, 3 **Exam 1** over Ch 1-4 HW Ch 4 is due March 3	Week 15 May 3, 5 **Open note Quiz 2** over Midterm Projects. Review for **Final Exam**
Week 8 March 8, 10 Ch 5 Lab 6—Light and Waves (Spring Break March 15-19)	A take-home **Final Exam** will be posted online by the morning of May 10 and will be due by midnight on May 10.