Physics 1304  
Astronomy of the Solar System

Instructor: Dr. Kenneth Carrell  
Email: kenneth.carrell@angelo.edu  
Phone: (325) 942-2136  
Office: VIN 119  
Office Hours: WR 1-3pm, M-F 11am-noon (if no groups)

Course Description  
Physics 1304, Astronomy of the Solar System, is a three credit hour introductory study of the current knowledge and techniques of planetary astronomy. Broad topics in the field will be covered, but the emphasis will be on the birth of modern planetary astronomy and planetary geology.

Required Text  
Astronomy by Fraknoi, Morrison, & Wolff  
Print:  
Digital:  
iBooks:  
ISBN-10: 0-9986257-3-6  

Assessing Outcomes & Grade Determination  
Method of Assessing Outcomes  
Student learning outcomes will be assessed with:  
• Worksheets/Quizzes (20%) for material are assigned each week. Worksheets will normally be posted on Mondays and ALL quizzes will be completed through Blackboard and due on Fridays.  
• Conceptual Activities (20%) will be posted on Blackboard and due as announced in class and on Blackboard.  
• Four midterm exams (40%) completed using Respondus LockDown Browser and due as given below.  
• A comprehensive Final Exam (20%) on Wednesday May 6th at 8am in the planetarium.  
• Extra credit will be given for attending public planetarium shows. You will receive 1% on your overall semester grade for every show you attend, up to a possible 5% total. Public shows are Thursday nights at 7 & 8 PM.  
• Extra credit will be given for attending the Moon Lecture on April 7th.

NOTE #1: If you know you will be gone on the day of an activity, you MUST inform the professor BEFORE the activity. Absences will receive a score of 0 (zero) and CAN NOT be made up unless proper documentation for extenuating circumstances is provided (e.g. a note from a doctor).
NOTE #2: Blackboard assignments are due “at the end of the day” which means 11:59PM. However, tests are timed and WILL NOT be available all the way until the end of the day (e.g. tests with 1-hour time limits will not be available starting at 11:00PM). Blackboard issues will arise, if you wait until the last minute to complete assignments you run the risk of missing them. I can fix problems such as browser crashes and internet outages, but NOT the hour before it is due. You have multiple days to complete work, so due dates are firm.

Late Work
Unexcused late work or missed tests will not be accepted. If your assignments are not submitted by the posted deadline you will receive a zero for that assignment. You must contact your professor before the assignment is due if you believe it will be late or as soon as possible after the due date in the case of an unexpected emergency.

Planetarium Class Etiquette
- No food, drinks, or tobacco products are allowed in the planetarium or the outer lobby area.
- Please do not leave trash in the planetarium or lobby.
- Please do not disturb fellow students during class time.
- Please do not put your feet up on the chair in front of you.
- Silence cell phones and other electronic devices.
- No texting/messaging during class.
- Please let me know if you will be using any electronic device during class.

Grade Determination
Your final grade will be determined by your scores on all tests and exams.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percent of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worksheets/Quizzes</td>
<td>20</td>
</tr>
<tr>
<td>Conceptual Activities</td>
<td>20</td>
</tr>
<tr>
<td>Midterm Exams</td>
<td>40</td>
</tr>
<tr>
<td>Final Exam (May 6th @ 8am)</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Angelo State University employs a letter grade system. Grades in this course are determined on a percentage scale: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 59% and below

Final course grades will also be determined in part based on attendance as follows:

<table>
<thead>
<tr>
<th>Number of Absences</th>
<th>Highest Grade Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 (&gt;85% attendance)</td>
<td>A</td>
</tr>
<tr>
<td>7-10 (75-85% attendance)</td>
<td>B</td>
</tr>
<tr>
<td>11-14 (65-75% attendance)</td>
<td>C</td>
</tr>
<tr>
<td>15-19 (55-65% attendance)</td>
<td>D</td>
</tr>
<tr>
<td>20+ (&lt;55% attendance)</td>
<td>F</td>
</tr>
</tbody>
</table>
General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook
- Angelo State University Catalog

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the university’s Statement of Academic Integrity.

Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
dallas.swafford@angelo.edu  
Houston Harte University Center, Room 112

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Plagiarism

Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the ASU Writing Center.
**Student Absence for Observance of Religious Holy Days**
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

**Title IX at Angelo State University**
The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.

---

1 [https://www.angelo.edu/student-handbook/](https://www.angelo.edu/student-handbook/)
2 [https://www.angelo.edu/catalogs/](https://www.angelo.edu/catalogs/)
3 [https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php](https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php)
4 [https://www.angelo.edu/services/disability-services/](https://www.angelo.edu/services/disability-services/)
5 [https://www.angelo.edu/content/files/14197-op-1011-grading-procedures](https://www.angelo.edu/content/files/14197-op-1011-grading-procedures)
6 [https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php](https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php)
7 [https://www.angelo.edu/dep/writing_center/academic_honesty.php](https://www.angelo.edu/dep/writing_center/academic_honesty.php)
8 [https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of](https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of)
## Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Reading</th>
<th>Work Due</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit #1: Background Science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January 13 – 17</td>
<td>Chapter 1: Science &amp; the Universe: A Brief Tour</td>
<td>Ch 1 Quiz</td>
</tr>
<tr>
<td>January 20 – 24</td>
<td>Chapter 2: Observing the Sky: The Birth of Astronomy</td>
<td>Ch 2 Quiz</td>
</tr>
<tr>
<td>January 27 – 31</td>
<td>Chapter 3: Orbits &amp; Gravity</td>
<td>Ch 3 Quiz Phases of the Moon</td>
</tr>
<tr>
<td>February 3 – 7</td>
<td>Chapter 4: Earth, Moon, &amp; Sky</td>
<td>Ch 4 Quiz Midterm Exam #1</td>
</tr>
<tr>
<td><strong>Unit #2: Looking Outward</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>February 10 – 14</td>
<td>Chapter 5: Radiation &amp; Spectra</td>
<td>Ch 5 Quiz</td>
</tr>
<tr>
<td>February 17 – 21</td>
<td>Chapter 6: Astronomical Instruments</td>
<td>Ch 6 Quiz</td>
</tr>
<tr>
<td>February 24 – 28</td>
<td>The History of Spaceflight (in-class material)</td>
<td>Spaceflight Quiz</td>
</tr>
<tr>
<td>March 2 – 6</td>
<td>Chapter 7: Other Worlds: An Introduction to the Solar System</td>
<td>Ch 7 Quiz Transiting Exoplanets Midterm Exam #2</td>
</tr>
<tr>
<td>March 9 – 13</td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td><strong>Unit #3: The Inner Solar System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 16 – 20</td>
<td>Earth (parts of Ch 8 &amp; 9 plus in-class material)</td>
<td>Earth Quiz Greenhouse Effect &amp; Sea Ice</td>
</tr>
<tr>
<td>March 23 – 27</td>
<td>Mercury &amp; Venus (Ch 10 plus in-class material)</td>
<td>Mercury &amp; Venus Quiz</td>
</tr>
<tr>
<td>March 30 – April 3</td>
<td>Mars (Ch 10 plus in-class material)</td>
<td>Mars Quiz Midterm Exam #3</td>
</tr>
<tr>
<td><strong>Unit #4: The Outer Solar System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 6 – 10</td>
<td>Jupiter (Ch 11 &amp; 12 plus in-class material)</td>
<td>Jupiter Quiz</td>
</tr>
<tr>
<td>April 13 – 17</td>
<td>Saturn (Ch 11 &amp; 12 plus in-class material)</td>
<td>Saturn Quiz</td>
</tr>
<tr>
<td>April 20 – 24</td>
<td>Uranus &amp; Neptune (Ch 11 &amp; 12 plus in-class material)</td>
<td>Uranus &amp; Neptune Quiz Midterm Exam #4</td>
</tr>
<tr>
<td>April 27 – May 1</td>
<td>Asteroids, Comets, &amp; Small Solar System Bodies (Ch 13 &amp; 14 plus in-class material)</td>
<td>Small Bodies Quiz Asteroid Discovery</td>
</tr>
<tr>
<td>May 6</td>
<td></td>
<td>FINAL EXAM @ 8AM</td>
</tr>
</tbody>
</table>