SOLAR SYSTEM ASTRONOMY LABORATORY SYLLABUS

PHYS 1104, Section 01Z
Fall 2020
CRN 12678
T 03:00pm–04:50pm
ASU Planetarium (VIN P-02) and Collaborate – Course Room

CONTACT INFORMATION

Dr. Michael C. Holcomb
Office: VIN 123 and Collaborate – Dr. Holcomb’s Virtual Office
Phone: 325.486.6787
Email: michael.holcomb@angelo.edu
Webpage: www.mcholcomb.com/teaching

Office Hours
Monday 03:00pm–05:00pm
Wednesday 03:00pm–05:00pm
Thursday 03:00pm–05:00pm
Also available by appointment

REQUIRED MATERIALS

  - This workbook comes with a download code for the Starry Night College software. Both the software
    and workbook are required for this course. Starry Night is a realistic and user-friendly planetarium
    simulation program that is designed to allow you to perform observational activities on your computer.
- TopHat.com access – Learn about TopHat on the ASU website.
- Access to a computer with reliable high-speed internet access.

COURSE OVERVIEW

This course serves as a laboratory introduction to the current knowledge and techniques of planetary astronomy and is
intended to accompany PHYS 1304 Astronomy of the Solar System. A broad range of topics will be covered; however,
the emphasis will be on the birth of modern planetary astronomy and planetary geology.

Expected Learning Outcomes

The expected learning outcomes for the course, listed below, will be assessed through performance on laboratory
assignments.

- Gain knowledge of methods of inquiry used in astrophysics and recognize the differences between them
- Demonstrate the ability to utilize and interpret the scientific models governing astrophysics
- Develop critical thinking, scientific reasoning, and problem solving skills in the area of astrophysics

COURSE COMPONENTS

Participation

During the scheduled class times, lab will simultaneously meet in-person and be streamed via Blackboard Collaborate.
In addition, a recording of lab each meeting will be offered for those that need to participate asynchronously (i.e. cannot
attend the in-person or synchronously streamed lab meeting). My recommendation is that everyone participate during the in-person/synchronous lab meeting and use the recordings to review and refresh as necessary.

We will use TopHat during lab meetings to take attendance and administer prelab quizzes. TopHat access can be purchased through the ASU website, which offers a discounted price. Once access has been purchased, you must register yourself at www.TopHat.com. Use both your legal name and your ASU Campus ID number (ex: 87654321) when setting up your account. The course code is 565850.

Attendance is considered mandatory and will be taken daily. Attendance will directly contribute to your participation grade in the course. Students attending the in-person/synchronous meetings will be able to report their attendance daily via TopHat. Students attending asynchronously will be expected to watch the recorded meeting within 3 days of its delivery and then email me with the TopHat attendance code. A spirit of honesty will be maintained in the attendance policy. Note that you are responsible for everything that we do, so it is to your advantage to attend.

Prelab quizzes will directly contribute to your participation grade in the course. Fully reading the lab writeup before each lab meeting is strongly recommended. Students attending in-person/synchronous meetings will be able to complete their prelab questions daily via TopHat. Students attending asynchronously will be expected to include their answers with their attendance code email.

Please thoroughly read the section of this syllabus regarding classroom etiquette for further information on expectations for lab meeting attendance.

**Lab Tests**
After completing each lab assignment, you will be expected to complete an online lab test. It is recommended that you complete this test immediately after completing the lab assignment. You are welcome to reference your lab report and answers to all associated questions. There will be no make up for lab tests.

**GRADING POLICIES**
The following scores will be recorded during the course of the semester: Participation (50%) and Lab Tests (50%).

Your letter grade will be determined on the following scale: F (≤59), D (60-69), C (70-79), B (80-89), A (90-100). The lecturer reserves the right to modify this scale by moving boundaries down; however, they will never be moved up.

**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.

**CLASSROOM ETIQUETTE**
Attending lab meetings is mandatory. You are considered both advised and responsible for anything discussed during lab meetings. Leaving meetings early or arriving late is considered both rude and distracting. If you have an expected reason to depart early, please inform the lecturer at the beginning of class. During in-person meetings, no food or drink will be allowed due to us meeting in the ASU Planetarium. During our synchronous meetings, please keep your video and microphone muted unless you are directing a question to your professor or have been directed to interact with your peers.

**IN-PERSON ETIQUETTE**
When attending in-person classes, all students are expected to be respectful of their peers during lecture by not becoming a distraction. If you become a distraction to other students, then you will be dismissed from class for that day. Some actions, including but not limited to the following, will result in you being considered a distraction to your peers: repeatedly arriving late, reading unrelated material, using your cell phone in any way outside of approved exercises, visiting with your neighbor, sleeping, eating, “vaping,” and the use of any and all tobacco products.
No laptops or any other electronic devices are allowed in class unless the need for such a device for reason of a disability is documented by Student Disability Services.

For the safety of your lecturer and peers, all students will be expected to wear a mask/facial covering that covers both the nose and mouth while attending class face-to-face. Any student not appropriately wearing a mask/facial covering will be dismissed from class for the day. As a member of the Texas Tech University System, Angelo State University has adopted a mandatory facial covering policy and repeated non-compliance may result in disciplinary action through the Office of Student Conduct.

**COLLABORATE ETIQUETE**

When attending class via Collaborate, you are encouraged to engage with your peers during class via the chat window; however, all students are expected to be respectful of their peers during lecture by not becoming a distraction. If you become a distraction to other students, then you will be dismissed from class for that day. Some actions, including but not limited to the following, will result in you being considered a distraction to your peers: repeatedly arriving late or leaving early, the use of inappropriate language or humor, and the sharing of untoward materials be they written, auditory, or visual in nature.

As a rule, please reread everything before you send it and treat all of your online interactions as though you were speaking face-to-face with that person.

**REQUIRED USE OF MASKS/FACIAL COVERINGS BY STUDENTS**

As a member of the Texas Tech University System, Angelo State University has adopted the mandatory Facial Covering Policy to ensure a safe and healthy classroom experience. Current research on the COVID-19 virus suggests there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. Therefore, in compliance with university policy, students attending this class face-to-face are required to wear a mask/facial covering before, during, and after class.

Faculty members may ask you to display your daily screening badge as a prerequisite to enter the classroom. You are also asked to maintain social distancing practices to the best of your ability, which means keeping ~6 feet of distance between yourself and others. For the safety of everyone, any student not appropriately wearing a mask/facial covering will be asked to leave the classroom immediately. The student will be responsible for making up any missed class content or work. Continued non-compliance with the Texas Tech University System Facial Covering Policy may result in disciplinary action through the Office of Student Conduct.

**MODIFICATIONS TO THE SYLLABUS**

All components of this syllabus are subject to modification at the lecturer’s discretion. In particular, the ongoing COVID-19 pandemic may require changes in course delivery, grade evaluation, schedule, and content on potentially short notice.

**INCLUSIVE LEARNING ENVIRONMENT**

(Adapted from Yale Center for Teaching and Learning)

**Civility and Respect**

Our university supports and wants to foster a civil, respectful, and open-minded climate so that all of us can live and work in an environment free of harassment, bias-motivated behaviors, unfair treatment, and fear. The university expects all members of our community to refrain from actions or behaviors that intimidate, humiliate, or demean persons or groups or that undermine their security or self-esteem based on traits related to race, ethnicity, country of origin, religion, gender identity/expression, sexual orientation, age, or physical or mental ability, including learning and/or developmental disabilities and past/present history of mental disorder or other category protected by state or federal law.
Student Disability Services

Angelo State University 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:

Point of Contact

**Director of Student Disability Services**
Dallas A. Swafford
Email: dallas.swafford@angelo.edu
Office
Houston Harte University Center, Room 112
Office Email: ada@angelo.edu
Office Phone: 325.942.2047

Title IX

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

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:

Point of Contact

**Director of Title IX Compliance and Title IX Coordinator**
Michelle Boone, J.D.
Email: michelle.boone@angelo.edu
Office
Mayer Administration Building, Room 210
Office Phone: 325.942.2022
Report an incident: www.angelo.edu/incident-form

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325.942.2371), the 24-Hour Crisis Helpline (325.486.6345), or the University Health Clinic (325.942.2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State’s policy please visit: www.angelo.edu/title-ix.
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.

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 Statement of Academic Integrity.

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.

Copyright Policy
Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

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

COURSE CALENDAR
Our tentative course calendar is below. I reserve the right to change this calendar as needed; however, I will inform you in class and via Blackboard announcement of any changes.

Remember to check our Blackboard class page regularly for assigned readings and homework. Also remember to check your university email (RamMail) account regularly for class updates and other important university correspondence.

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<thead>
<tr>
<th>Week of</th>
<th>Events</th>
<th>Lab Topic</th>
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<tbody>
<tr>
<td>Aug. 17</td>
<td><strong>Tuesday, Aug. 18:</strong> First class meeting</td>
<td>Lab 1 – Starry Night Tutorial</td>
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<td><strong>Thursday, Aug. 20:</strong> Last day to make schedule changes for Fall 2019</td>
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<td><strong>Sunday, Aug. 23:</strong> Lab 1 Test DUE</td>
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<td>Aug. 24</td>
<td><strong>Sunday, Aug. 30:</strong> Lab 2 Test DUE</td>
<td>Lab 2 – Starry Night Student Exercises: A1, A2, A3, A4, &amp; A5</td>
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<td>Aug. 31</td>
<td><strong>Tuesday, Sept. 01:</strong> Drops and withdrawals will now be recorded on transcripts</td>
<td>Lab 3 – Starry Night Student Exercises: A6, A7, A8, A9, &amp; A13</td>
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<td>Week of</td>
<td>Events</td>
<td>Lab Topic</td>
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<td>Sept. 06</td>
<td><strong>Sunday, Sept. 06:</strong> Lab 3 Test DUE</td>
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<td>Sept. 07</td>
<td><strong>Monday, Sept. 07:</strong> Labor Day - No class, university holiday</td>
<td>Lab 4 – Precession (pg. 33)</td>
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<td><strong>Sunday, Sept. 13:</strong> Lab 4 Test DUE</td>
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<td>Sept. 14</td>
<td><strong>Sunday, Sept. 20:</strong> Lab 5 Test DUE</td>
<td>Lab 5 – Starry Night Student Exercises: A10, A11, &amp; A12 <strong>AND</strong> Motion of the Moon (pg. 15)</td>
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<td>Sept. 21</td>
<td><strong>Sunday, Sept. 27:</strong> Lab 6 Test DUE</td>
<td>Lab 6 – Starry Night Student Exercises: B1, B2, B3, B4, &amp; B5 <strong>AND</strong> Kepler’s Laws (pg. 39)</td>
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<td>Sept. 28</td>
<td><strong>Sunday, Oct. 04:</strong> Lab 7 Test DUE</td>
<td>Lab 7 – Flying to Mars (pg. 43)</td>
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<td>Oct. 05</td>
<td><strong>Sunday, Oct. 11:</strong> Lab 8 Test DUE</td>
<td>Lab 8 – Starry Night Student Exercises: B6, C1, C2, C4, &amp; C5</td>
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<td>Oct. 12</td>
<td><strong>Sunday, Oct. 18:</strong> Lab 9 Test DUE</td>
<td>Lab 9 – The Moons of Jupiter (pg. 47)</td>
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<td>Oct. 19</td>
<td><strong>Sunday, Oct. 25:</strong> Lab 10 Test DUE</td>
<td>Lab 10 – The Rings of Saturn (pg. 53)</td>
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<td>Oct. 26</td>
<td><strong>Sunday, Nov. 01:</strong> Lab 11 Test DUE</td>
<td>Lab 11 – Starry Night Student Exercises: D1, D2, D3, &amp; D4</td>
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<td>Nov. 02</td>
<td><strong>Sunday, Nov. 08:</strong> Lab 12 Test DUE</td>
<td>Lab 12 – Pluto and Kuiper Belt Objects (pg. 57)</td>
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<td>Nov. 09</td>
<td><strong>Tuesday, Nov. 10:</strong> Last day to drop or withdraw</td>
<td>Lab 13 – Asteroids (pg. 61)</td>
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<td><strong>Sunday, Nov. 15:</strong> Lab 13 Test DUE</td>
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<td>Nov. 16</td>
<td><strong>Tuesday, Nov. 17:</strong> No Lab Meeting</td>
<td>Extra Credit – Lab 14 – The Celestial Sphere (pg. 1)</td>
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<td><strong>Sunday, Nov. 22:</strong> Lab 14 (EC Lab) Test DUE</td>
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* All due times are 11:59 pm CST, unless otherwise specified.