

PHYS 1104

Stellar Astronomy Lab



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Office: VIN 118

Office Hours: Contact me by e mail anytime 9am to 9 pm

It will be easiest to contact me via email. Please feel free to contact me if you have any problems whatsoever in this course—or if you're doing well, and just want to talk about the wonders and mysteries of the universe. It's in all our interests, and I care, that you do well! The best way to contact me is by personal in-office visit, or by e mail. Telephone is often less useful because the visual aspect is missing, and it is often important if I am to respond properly to you.

The chart below specifies what is to be done each week. All exercises are due on Sundays.

Assignments Due Each Week of PHYS1104

Assignments are shown in the table on the next page

Course Information

Course Description

This course is a one-hour introduction to study of the current knowledge and techniques of modern astronomy. Course content focuses on the universe beyond the solar system including studies of nebulae, the life cycles of stars, galaxies, and cosmology. Emphasis is placed on current knowledge of the universe and how astronomical measurements are made. This lab and its related course (PHYS1304) and the companion courses (PHYS 1303/1103) satisfy the eight-hour physical science with lab requirement for most degree programs and can also be used in most degree plans for elective credit hours.

Week	Topics	Assign	Points	Disc B	Week 8	Pt Avail each week
1	Tutorial	T	8	5		
1	Diurnal Motion	A1	4			
1	Earth's Revolution around the Sun	A2	4			
1	Solar and Sidereal Days	A7	4			25
2	The Year and Seasons	A8	12			
2	The Analemma	A9	9			
2	The Moon	A10	5			26
3	Phases of the Moon	A11	11			
3	Lunar and Solar Eclipses	A12	6			
3	Precession and Nutation	A13	5			22
4	Geocentric to Heliocentric Model	B1	2			
4	Planetary Orbits and Configurations	B2	5			
4	Johannes Kepler and Elliptical Orbits	B3	3			
4	Galileo Strengthens the Heliocentric Model	B4	4			14
5	Modern Observations of Our Solar System	B5	3			
5	Size and Scale of the Solar System	B6	7			
5	Romero's Light Experiment	B7	2			
5	Inner Planets	C1	6			18
6	Outer Planets	C2	3			
6	Direct and Retrograde Motion	C3	3			
6	The Moons of the Planets	C4	5			
6	The Dwarf Planets	C5	5			16
7	Asteroids of the Main Belt	D1	4			
7	Comets and Meteors	D2	4			
7	Impact: Near Earth Objects	D3	3			
7	Trans-Neptunian Objects	D4	2			13
8	Mission to Mars				50	50
						184

Prerequisite and Co-requisite Courses

No one should take this lab without having taken PHYS 1304 or be taking it at the same time.

Prerequisite Skills

There are no prerequisite courses for this course, *however it is foolish to attempt to take this lab course if you have not already taken or are taking PHYS1304 Solar System Astronomy.*

Student Learning Outcomes

Goals, Objectives, and Outcomes

Course Objectives/Learning Outcomes

When you finish this course, you should be able to:

- **Objective One:** Understand and apply appropriate methods and technology to the study of the natural sciences.
- **Objective Two:** Recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
- **Objective Three:** Identify and recognize the differences among competing scientific theories.
- **Objective Four:** Obtain the intellectual ability to translate, interpret, and extrapolate the most important scientific models governing modern astrophysics, the practices and methodologies used by modern astronomers in constructing astrophysical models, and to be familiar with the astronomical objects studied by astronomers.
- **Objective Five:** Further develop critical thinking and problem solving skills in the area of astronomy and the natural sciences.

Student learning outcomes will be assessed through a combination of written assignments and active participation in the cohort discussions established through a discussion board Forum. Just one is posted, and it counts as up to 5 extra points for the course.

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- **Objective Five:** Further develop critical thinking and problem solving skills in the area of astronomy and the natural sciences.

Student learning outcomes will be assessed through a combination of written assignments and active participation in the cohort discussions established through discussion board questions each week.

Course Organization

The total number of questions for these labs is 182. Each lab will be scored by the total number of points earned by answering that lab. At the end, the sum of points earned will be converted to a percent of 182 possible points.

Course Delivery

This is an online course offering that will be delivered via Blackboard.

Required Texts and Materials

The only materials required for the course is *Starry Night*, v. 8 software, obtainable from the Angelo State Bookstore, or from the publisher.

For the bookstore, you may go in person, or go to the store's website:

<http://shopangelo.com>

To order from the bookstore you need to supply your ASU e mail address and your CID. (The bookstore phone is 325-942-2335).

You can obtain *Starry Night* by purchasing it from Simulation Curriculum online

<https://store.simulationcurriculum.com/collections/college-astronomy/products/starry-night-college-student-download>

This is the store for downloading *Starry Night*, v. 8. You will need an access code for these courses, which is **Code: 71c5** . **If you cannot open the site by clicking on above link, then copy the link and paste it into your browser.** Students will be able to purchase and download their student edition for \$29.95. Download takes 15 minutes or less.

If you are out of the continental United States, you may not be able to acquire the software from the publisher.

Please call Simulation Curriculum (Michael Goodman), or go to the support site if they have any problems. Simulation Curriculum Corp. [877-290-8256](tel:877-290-8256)

Technology Requirements

To successfully complete this course, students need to have access to a good enough Internet connection to be able to use Blackboard and e mail. You will require a computer. You will not be able to do the course using a phone or a pad.

Communication

In this class, we will communicate primarily by writing, mostly in e mail. In any form of communication, you are expected to treat your fellow students and your instructor with courtesy and respect. In this class, the following rules of etiquette apply:

- Spelling and grammar count. Don't use slang terms or shorthand "text-speak" abbreviations.
- It's okay to disagree, but it's not okay to insult. Flame-wars and [ad-hominem](#) attacks are not acceptable.
- No profanity. Offensive language will not be tolerated.
- No racial, ethnic, or cultural slurs. This may result in your removal from the class.

Grading

Evaluation and Grades

Course grades will be determined as indicated in the table below.

A	165.6
B	147.2
C	128.8
D	110.4
F	Below 110.4

Extra Credit

You may earn extra credit (5 points per unique show) for attending [Planetarium shows](#). If you attend, you must sign in at the door. Write your Name (**legibly**), your CID, and specify PHYS1104 (online). *If you are also taking PHYS1304 you may split points.* You can't get credit for seeing the same show twice, or credit for both, but you may get credit for every unique show you attend. If you have questions, email me. If you are off campus or otherwise unable to attend shows in the ASU Planetarium, contact me for other alternatives for extra credit. Owing to COVID-19 there may not be any Planetarium Shows available.

Final Exam

This course does not require a final exam as you are evaluated on a weekly basis. However all work must be completed by the dates specified in assignments.

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](#)¹
- [Angelo State University Catalog](#)²

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](#).³

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](#).⁴ The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. 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](#)⁵ for more information.

Plagiarism

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)⁶ 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](#).⁷

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](#)⁸ for more information.

Title IX at Angelo State University

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.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: [Incident Reporting Form](#)⁹

Face to Face: Mayer Administration Building, Room 210

Phone: 325-942-2022

Email: michelle.miller@angelo.edu

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 the [Title IX website](#).¹⁰

Information About COVID-19

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#)¹¹ web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification on potentially short notice based on developing circumstances.

Course Schedule

All dates are shown above and are posted in the Blackboard site for the course.

¹ <https://www.angelo.edu/current-students/student-handbook/>

² <https://www.angelo.edu/academics/catalog/>

³ <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

⁴ <https://www.angelo.edu/current-students/disability-services/>

⁵ <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

⁶ <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

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- ⁷ https://www.angelo.edu/current-students/writing-center/academic_honesty.php
- ⁸ <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>
- ⁹ <https://www.angelo.edu/incident-form>
- ¹⁰ <https://www.angelo.edu/title-ix>
- ¹¹ <https://www.angelo.edu/covid-19/>