Course Number: PHYS 1304 DS2
Astronomy of the Solar System (22110)

Instructor Name: Fred L. Wilson, Ph. D.
Office Location: VIN 135
(325) 486-6984
fwilson@angelo.edu
Office Hours: M-F 2-4 PM
Virtual Office M-F, 2-4 PM (email and Blackboard)

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.

Course Description/Overview

This course is a three hour introduction to Solar System Astronomy. A separate laboratory course can be taken. The sequence of astronomy courses (PHYS 1303 and 1304) plus labs (PHYS 1103 and PHYS 1104) satisfy the eight hour physical science with lab requirement for most degree programs. This course can be used for elective credits in most degree programs. Physics 1304, Astronomy of the Solar System, is an introduction to astronomy of the Solar System, covering night sky observations, the techniques and methods of modern astronomy, and basic concepts related to solar system objects such as planets, asteroids, and comets. This is an eight-week, online course.

Course Bibliography and Required Readings:

Understanding Our Universe by Palen, Kay, Smith, Blumenthal, 2nd edition
Publisher: Norton

ISBN: 978-0393936315

It is essential that you obtain a recent version of the text. You are expected to read, review and practice all of the content in this course. If you choose, you may download a free book, Astronomy from OpenStax, Astronomy.

Prerequisites

There are no prerequisites for this course.
Technical skills required for this course

As with all online courses, students must be able to operate a computer and have the necessary technical skills to navigate around a web page. Additional technical skills are not a prerequisite for this course, however your computer must meet minimum requirements to operate Blackboard. NOTE: You will NOT be able to do this course using a phone only. You will find it difficult if not impossible using only a pad as well. Many parts of this course will work very poorly on a tablet.

Time spent on this course

Students can expect to spend a minimum of 6 hours per week to complete all the readings and assignments. The lessons themselves take as long as the student will require to read the materials and watch or listen to media presentations. Assignments are due throughout the week, so it is not possible to do the course successfully by doing it only on weekends.

Goals, Objectives, and Outcomes

Course Goals

Apart from the utility of Astronomy in the ordinary sense of the word, the study of the science is of the highest value as an intellectual training. No other science so operates to give us on the one hand just views of our real insignificance in the universe of space, matter, and time, or to teach us on the other hand the dignity of the human intellect as the offspring, of the Divine; able in a sense to “comprehend” the universe, and know its plan and meaning. The study of the science cultivates nearly every faculty of the mind; the memory, the reasoning power, and the imagination all receive from it special exercise and development. By the precise and mathematical character of many of its discussions it enforces exactness of thought and expression, and corrects that vague indefiniteness which is apt to be the result of pure literary training. On the other hand, by the beauty and grandeur of the subjects it presents, it stimulates the imagination and gratifies the poetic sense. In every way it well deserves the place which has long been assigned to it in education.

Course Objectives:

The following two objectives are the major performance goals for the course.

Objective One: After completing this course you should comprehend the most important scientific models governing modern astrophysics and be familiar with the astronomical objects studied by astronomers.

Objective Two: After completing this course you should comprehend the practices and methodologies used by modern astronomers in constructing astrophysical models.

Student learning outcomes will be assessed through a combination of assignments submitted each week online. Every question is underwritten by a specific learning objective and a reference to Bloom’s taxonomy. (I doubt most of you will care much about this.)
Course Organization

Lesson 1: Sky Patterns
Lesson 2: Laws of Motion
Lesson 3: Light and Telescopes
Lesson 4: Solar System Formation
Lesson 5: Terrestrial Worlds
Lesson 6: Planet Atmospheres
Lesson 7: Giant Planets
Lesson 8: Small Bodies

READING ASSIGNMENTS, TESTS, & IMPORTANT DATES

All reading assignments are in text, *Understanding Our Universe* by Palen, Kay, Smith, Blumenthal, edition 2. Each week the reading assignments will be posted. Also the corresponding reading from OpenStax *Astronomy* will be specified.

Each week’s work is available Monday morning at 12:01 AM. Each week’s work closes at midnight Sunday. [Even though a holiday may occur during the 8 weeks, the course will be open at 12:01 AM on Monday, and all work is due by Sunday night at midnight.] The exception is that on the Discussion Board, students must post a thread each week by Thursday midnight in order to receive full credit.

Course Responsibilities and Dates

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<th>Week</th>
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Due Dates for Assignments

Week 1: Study Chapter 2; Set Thread for topic 1 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.
Week 2: Study Chapter 3; Set Thread for topic 2 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.
Week 3: Study Chapter 4; Set Thread for topic 3 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.; Submit Project 1 by Sunday, 11:59 pm through Safe Assign

Week 4: Study Chapter 5; Set Thread for topic 4 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.

Week 5: Study Chapter 6; Set Thread for topic 5 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.; Submit Project 2 by Sunday, 11:59 pm through Safe Assign

Week 6: Study Chapter 7; Set Thread for topic 6 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.

Week 7: Study Chapter 8; Set Thread for topic 7 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Sunday, 11:59 pm.; Submit Project 3 by Sunday, 11:59 pm through Safe Assign

Week 8: Study Chapter 9; Set Thread for topic 8 in the Discussion Board by Thursday; Comment on at least two other students’ threads by Thursday, 11:59 pm; You may also submit the optional Final Exam (no risk, only bonus points) by Sunday, 11:59 pm.

Quizzes open on Monday of each week (12:01 am) and are available for answering. Quizzes close at 11:59 pm on Sunday of each week. In order for a quiz to count it must be answered and submitted.

Many online courses use a host of multiple choice questions for online testing. In this course you will have different graded assignments each week. First is set of quizzes, each quiz tied to a specific set of objectives for the week. Second, each week there is a topic for you to respond to on the Discussion Board. You set a thread (by Thursday of the week) and comment on at least two other students’ posts by Sunday 11:59 pm. The exception is week 8 when everything on the Discussion Board must be completed by Thursday of the final week (in order that it may be graded in time to turn in grades.). Third, there are three Research Projects due in week 3 (Project 1), week 5 (Project 2), and week 7 (Project 3). The projects are simple and fully described in the Safe Assign tab in Blackboard. Extra credit is available for attending Planetarium shows, as well as for several other opportunities, described at the Extra Credit tab in Blackboard.

This is an 8-weeks course, and things become due awfully fast. No makeup unless you can justify (to my satisfaction) dire circumstances, beyond your control. You just have to keep up with the course. Getting a late start for whatever reason is not, in itself, justification for makeup work. Posts on the Discussion Board may not be made up for any reason.

**Grading Policies**

Your grade is determined by the percentage of available points you earn by the end of the 8 weeks. The various assignments are weighted approximately as shown in the table below.

- **Quizzes:** 72.5% (Weekly activity, 731.5 total points)
- **Discussion Board:** 20% (Weekly activity, 200 total points)
- **Projects 1, 2, 3:** 7.5 % (Weeks 3, 5, 7, 75 total points)

There are 1006.5 points available for assignments. However, your grade will be based on 1000 points. Actually, with extra credit, it is possible to earn *more* than 1000 points.
Grades
Angelo State University employs a letter grade system. Grades in this course are determined on a percentage scale:
A = 90 – 100 % (900 or more points).
B = 80 – 89 % (800—899 points)
C = 70 – 79 % (700-799 points)
D = 60 - 69 % (600-699 points)
F = 59 % and below (below 600 points).

Assessment Items
This is an 8-weeks’ course, and things become due awfully fast. NO MAKEUPS FOR ANY REASON EXCEPT IN DIRE CIRCUMSTANCES, beyond your control. If such circumstances arise, you must contact me as soon as possible, and we will work out a plan, if warranted. You just have to keep up with the course. Discussion Board posts may not be made up for any reason.

READING ASSIGNMENTS, TESTS, & IMPORTANT DATES
All reading assignments are in the text, Understanding Our Universe, 3rd ed., by Palen, Kay, Smith, Blumenthal. Each week the reading assignments will be posted. Also the corresponding reading from OpenStax Astronomy will be specified. I recommend (but do not require) the Pasachoff and Filippenko as well.

This is an 8 week course (10/21—12/15). Each “module” covers one week of the course. Each week’s work is available Monday morning at 12:01 AM. Each week’s work closes at midnight Sunday. [Even though a holiday may occur during the 8 weeks, the course will be open at 12:01 AM on Monday, and all work is due by Sunday night at midnight.] ONE EXCEPTION: The Discussion Board for week 8 requires all threads and comments be posted by midnight Thursday of the last week (12/12/19) so final grades may be determined by the University deadline.

There is a Discussion Board topic every week. Your thread must be posted by Thursday midnight each week. You must also respond to at least two other students’ threads by midnight Sunday. The maximum points for each week’s post is 23.

There are three astronomy papers, described in Blackboard. Projects require very little time. They are due at the end of the 3rd, 5th, and 7th weeks (Sunday, Midnight). Each project is worth 24 points, total points for Research Projects is 72.

Extra credit is also available for attending Planetarium shows. An optional final will also be available for extra credit. Other extra credit may be earned as described in the Extra Credit tab on Blackboard.

This is an 8-weeks course, and things become due awfully fast. NO MAKEUPS unless you can justify (to my satisfaction) dire circumstances, **beyond your control**. You just have to keep up
with the course. Getting a late start for whatever reason is not, in itself, justification for makeup work.

Since this is an ONLINE COURSE, it is really important that you feel part of a group instead of a lone wanderer trying to navigate astronomy. To that end there is a Discussion Board. There are non-graded forums where you may ask questions, and offer suggestions for the course. In week 1 you are to introduce yourself. The forum explains what you are to do. This can be significant in your grade, since you may earn up to 25.5 points for a set of posts each week (your thread and responses to at least two other students’ threads). **For every graded forum to get full credit you must create a thread and post at least two responses to threads created by other students.** **Threads must be set by Thursday midnight, and responses by midnight, Sunday.**

**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. An *optional* final will be available. It will NOT hurt you but is a way to gain additional points.

**Administration**

**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.

**Feedback**
As the instructor of this course, it is my goal to respond to all communication within one working day. At a minimum, you can expect me to be actively engaged in this course during the stated office hours, and will strive to be responsive at other times as well. In addition, I will do my best to grade all writing assignments and provide feedback within 2 days of the due date for the assignment.

**Attendance**
This is an online course and attendance is not taken. However, failure to communicate, or respond to e-mails from your professor, is an indication something is wrong.
**Late Work**

You must contact your professor before the assignment is due if you believe it will be late. Failure to do so will result in a zero for the assignment. In general it will not be possible to do a posted assignment late. No make ups of any kind are allowed after the fact except in dire circumstances. Don’t ask.

**Incompletes**

The University policy on grades of “Incomplete” is that the deficiency in performance must be addressed satisfactorily by the end of the next long (16 week) semester or the grade automatically becomes a “F”. Grades of “Incomplete” will only be awarded to students who have demonstrated sufficient progress to earn the opportunity to complete the course outside of the normal course duration. The award of an “Incomplete” will only be made in rare circumstances, with the concurrence of the student and the professor on what specific tasks remain and when they are due for the grade to be changed to a higher grade. The determination of the need to award an “Incomplete” is entirely up to the professor's personal judgment.

**Add/Drop dates**

Students may add or drop this course within the dates assigned by Angelo State University. For exact dates see the Academic Calendar for ASU

**University Policies**

**Accommodations for Disability**

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.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Ms. Dallas A. Swafford  
Director of Student Disability Services  
325-942-2047  
dallas.swafford@angelo.edu  
Houston Harte University Center
Title IX at Angelo State University: (Administration Provided Statement Required for all Syllabi.)

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 Boone, J.D. You may submit reports in the following manner:

Online: www.angelo.edu/incident-form
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
E-Mail: michelle.boone@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 (325942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-9422171).

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

Student absence for religious holidays

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.
**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.

**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 to 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 via SafeAssign. 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.