

Fundamentals of Physics II

PHYS 2326 020

Fall 2019

VIN 160, TR 9:30 – 10:45

Instructor: Scott Williams (VIN 128)

Office Hours: MWF 9:00 – 10:00, MTRF 13:00 – 14:00, W 13:00 – 16:00, and by appointment

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Required Materials: *University Physics Vols. II<sup>1</sup> & III<sup>2</sup>* by OpenStax and a scientific calculator

Course Description: A comprehensive course with emphasis placed on the capacity to utilize fundamental concepts of electricity, magnetism, and optics in the solution of problems.

Student Learning Outcomes: Upon completion of Physics 2326, students will have an increased understanding of the fundamental concepts, theories and physical laws relevant to the broad topical areas of electricity, magnetism, circuits, and optics. Students will have practiced and demonstrated a satisfactory level of mastery in critical reading, critical thinking, and problem solving skills. Students will have engaged in quantitative laboratory experimentation; practiced sound scientific laboratory methods; and utilized a variety of different laboratory measurement techniques, general laboratory skills, data analysis procedures, and error propagation techniques. Students will also develop and improve technical communication skills required for scientific reporting. These outcomes will be assessed using test grades.

Policies: Mobile phones and music players must be turned off at all times. Note that this means that you cannot use a mobile phone as your calculator. Use of any electronic device other than your calculator during a test is not allowed. There are no make-up opportunities for quizzes or in-class activities. Tests may not be made up unless in the event of a university-excused absence, in which case it is the student's responsibility to schedule a time to make-up the missed test. Homework will be assigned approximately once a week. Homework problems are intended to help students prepare for tests. Homework is due at the *beginning* of class, *before* lecture begins. Late homework will be accepted for a 3-day period following the original due date/time. For every day the homework is late after the original due date, 25% will be deducted from the assignment's score.

Grading: Final grades are based on homework, in-class activity, quiz, and test grades. Four regular tests will be given during the semester. A comprehensive final test will be given during the normal final test time for this lecture period. Final grades will be weighted as follows:

homework, activities, and quizzes:	25%
tests:	50%
final test:	25%

Accommodations: Persons with disabilities which may warrant academic accommodations must contact the Student Life Office (UC 112) in order to request and to implement academic accommodations. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

<sup>1</sup> <https://openstax.org/details/books/university-physics-volume-2>

<sup>2</sup> <https://openstax.org/details/books/university-physics-volume-3>

Honor Code: Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Any student caught cheating will receive a grade of F for the semester. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

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. 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.

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. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

## PHYS 2326 Course Schedule

27 August – 29 August	Reflection & Refraction of Light (volume III, chapter 1)
3 September – 5 September	Geometric Optics (volume III, chapter 2)
10 September – 12 September	Wave Optics (volume III, chapters 3 & 4)
17 September	Test #1
19 September – 24 September	Electric Fields & Coulomb's Law (volume II, chapter 5)
26 September – 1 October	Gauss's Law & Electric Flux (volume II, chapter 6)
3 October	Electric Potential (volume II, chapter 7)
8 October	Capacitance (volume II, chapter 8)
10 October	Test #2
15 October	Current & Resistance (volume II, chapter 9)
17 October	Kirchhoff's Laws (volume II, chapter 10)
22 October	DC Circuits (volume II, chapters 9 & 10)
24 October	Magnetic Fields (volume II, chapter 11)
29 October – 31 October	Calculating Magnetic Fields (volume II, chapter 12)
5 November	Test #3
7 November – 12 November	Faraday's Law & Inductors (volume II, chapters 13 & 14)
14 November – 19 November	AC Circuits (volume II, chapter 15)
21 November	The Electromagnetic Spectrum (volume II, chapter 16)
26 November	Test #4
3 December – 5 December	Review
12 December (8:00 – 10:00)	Final Test

PHYS 2126 Laboratory Schedule (01Z & 02Z)

27/29 August	No laboratory meeting
3/5 September	Introduction to Lab Reports
10/12 September	Refraction and Snell's Law
17/19 September	Thin Lenses
24/26 September	No laboratory meeting
1/3 October	Equipotentials and Electric Fields
8/10 October	Ohm's Law and Resistivity
15/17 October	RC Time Constant
22/24 October	No laboratory meeting
29/31 October	Kirchhoff's Rules
5/7 November	The Magnetic Field of the Earth
12/14 November	Magnetic Induction
19/21 November	RLC Resonance
26/28 November	No laboratory meeting
3/5 December	Laboratory Practicum
10/12 December	No laboratory meeting

The instructor reserves the right to modify/adjust any of the procedures, grading scales, and scheduling presented in this syllabus.