Instructor: Scott Williams (VIN 128)

Office Hours: MWF 8:00 - 9:00 and 10:00 - 11:00, MW 14:00 – 16:00, and by appointment

E-mail: scott.williams@angelo.edu

Required Texts: Physics for Scientists and Engineers, by Serway and Jewett (any edition), and Physics 2426 Laboratory Manual, Fall 2018 edition

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 2426, 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 and laboratory 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. Homework will be assigned approximately once or twice a week. 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 laboratory report, 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:

- laboratory reports: 25%
- homework, activities, and quizzes: 15%
- tests: 40%
- final test: 20%

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.

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.
Course Schedule

27 August-29 August    Ray Optics (chapter 35)
31 August-5 September    Image Formation (chapter 36)
7 September-10 September    Wave Optics (chapter 37)
12 September-14 September    Diffraction and Polarization (chapter 38)
17 September    Review
19 September    Test #1
21 September-24 September    Electric Fields (chapter 23)
26 September-28 September    Gauss’ Law (chapter 24)
1 October-3 October    Electric Potential (chapter 25)
5 October-8 October    Capacitance and Dielectrics (chapter 26)
10 October    Review
12 October    Test #2
15 October-17 October    Current and Resistance (chapter 27)
19 October-22 October    DC Circuits (chapter 28)
24 October-26 October    Magnetic Fields (chapter 29)
29 October-31 October    Sources of the Magnetic Field (chapter 30)
2 November    Review
5 November    Test #3
7 November-9 November    Faraday’s Law (chapter 31)
12 November-14 November    Inductance (chapter 32)
16 November-19 November    AC Circuits (chapter 33)
26 November-28 November    Electromagnetic Waves (chapter 34)
28 November    Review
30 November    Test #4
3 December-7 December    Review
12 December (10:30-12:30)    Final Test
Laboratory Schedule (03Z & 04Z)

28/30 August  
No laboratory meeting

4/6 September  
Introduction to Lab Reports

11/13 September  
Refraction and Snell's Law

18/20 September  
Thin Lenses

25/27 September  
No laboratory meeting

2/4 October  
Equipotentials and Electric Fields

9/11 October  
Ohm's Law and Resistivity

16/18 October  
RC Time Constant

23/25 October  
No laboratory meeting

30 October/1 November  
Kirchhoff's Rules

6/8 November  
The Magnetic Field of the Earth

13/15 November  
Magnetic Induction

20/22 November  
No laboratory meeting

37/29 November  
RLC Resonance

4/6 December  
No laboratory meeting

11/13 December  
No laboratory meeting

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