### DEPARTMENT OF PHYSICS ASTRONOMY AND ENGINEERING

**MEETING TIME:** 1:00 pm - 1:50 pm MWF  
**MEETING PLACE:** 103 Cole STEM Bldg.  
**INSTRUCTOR:** Walter L. Trkosko  
**CONTACT:** wtrkosko@sfasu.edu Tel: 468-3001  
**OFFICE:** 207-C Cole STEM Bldg.  
**OFFICE HOURS:** 9:30-10:30 a.m. M-F and 2:00-4:00 p.m., MTW or by appointment.  
**TEXT:** OPENSTAX University Physics Vols. 1, 2 and 3  
**PREREQUISITES:** (Course or Test: PHY 2325&MTH2313  
**COREQUISITES:** Phy 2126

**COURSE DESCRIPTION:** Presentation of the principles of sound, electricity, magnetism and optics. Lecture and laboratory grades are computed into one grade and the same grade is recorded for both lecture and lab.

**CREDIT HOUR JUSTIFICATION:** Meets 3 hrs/wk for 15 weeks, and also meets for a 2-hour final examination. This is a problem-oriented class and lab with homework problems. The lecture and lab combine for 6 hours of contact time each week. The work outside of class for the combined courses averages more than 12 hours/week.

**COURSE CONTENT:** The chapters on the calendar refer to the chapters in the text. They are:

- V1 Chap. 1 The Nature of Light  
- V1 Chap. 2 Geometric Optics and Image Formation  
- V1 Chap. 3 Interference  
- V1 Chap. 4 Diffraction  
- V2 Chap. 6. Gauss’ Law  
- V2 Chap. 7 Electric Potential  
- V2 Chap. 8 Capacitors  
- V2 Chap. 9 Current and Resistance  
- V2 Chap. 10 DC Circuits  
- V2 Chap. 11 Magnetic Forces and Fields  
- V2 Chap. 12 Sources of Magnetic Fields  
- V2 Chap. 13 Electromagnetic Induction  
- V2 Chap. 14 Inductance  
- V2 Chap. 15 Alternating-Current Circuits  
- V2 Chap. 16 Electromagnetic Waves  
- V3 Chap. 1 The Nature of Light  
- V3 Chap. 2 Geometric Optics and Image Formation  
- V3 Chap. 3 Interference  
- V3 Chap. 4 Diffraction  

**ATTENDANCE:** You are expected to attend every class. If you become ill or have a restroom emergency during the lecture, please excuse yourself quietly. If you need to study for another class, the library is available. If you need to nap, that is best done at home – not in the classroom.

**TAKE RESPONSIBILITY FOR YOUR SELF AND YOUR EDUCATION:**
- Show up to class on time (awake and substance-free) ready to listen, participate, and learn.  
- Buy the book and other required materials and bring them to class.  
- Perform all readings and assignments and homework on time.  
- Do the homework yourself.  
- Ask questions in class.  
- Don’t text, browse on your computer or perform other activities which might distract other students.  
- Read the syllabus and ensure that you understand what is expected of you.  
- Set aside sufficient time to study, include extra time for exams. You can expect to spend three hours outside of class preparing for every hour in class.  
- Inform your professor immediately if an emergency prevents the completion of an exam, paper, or other assignment as scheduled.  
- Be honest and ethical in the completion of class work, do not plagiarize or participate in other forms of academic dishonesty.

**HOMEWORK** (100): Throughout the semester, problems will be assigned that are intended to illustrate the principles covered in the lecture. These problems represent the minimum number that the student should work in order to obtain some understanding of the concepts. Homework will be posted on D2L. It is to be scanned and turned in on D2L on or before the due date.

**EXAMS** (125): There will be four exams as at appropriate times after completing the chapters below. These exams will consist of several problems and/or proofs. In class exams will be given from 6:00 p.m. to 7:30 p.m. in STEM 104 on the days indicated on the calendar.

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**TECHNICAL PHYSICS II**

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½ March 6, 2024: Mid-semester.  
* April 10, 2024: Last day to drop or withdraw  
* May 8, 2024: Final Exam 1:00 p.m.-3:00 p.m.

V 1 January 19, 2024: This syllabus supersedes all previous versions.
The student is expected to know and understand the equations required for the exams. Students will have a week after an exam is returned to discuss any possible errors made in the grading thereafter no changes will be made in the grade. The student is expected to be present for all exams.

**FINAL EXAM (125):** The Final Exam will be comprehensive with emphasis the material covered since the last exam. The Final will be given Wednesday May 8, 2024: from 1:00 p.m.-3:00 p.m.

**FINAL AND COURSE ASSESSMENT:** The method of evaluation is based on outside exercises (homework) and scores from in-class examinations. In the determination of the final grade for both the lecture and the lab, the laboratory grade contributes 25% whereas the lecture part of the final grade contributes 75% toward the final grade for the course. The same grade is recorded for both the lecture and the laboratory.

**PROGRAM LEARNING OUTCOMES:** the program learning outcomes addressed in this course are

1. critical thinking skills and the empirical
2. quantitative skills activity

and these will be accessed in the laboratory component of this course.

**STUDENT LEARNING OUTCOMES:**

- To understand and apply method and appropriate technology to the study of physical science
- To 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 written.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture

**ACADEMIC INTEGRITY:** Academic Integrity is the responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways, including instruction on the components of academic honesty and abiding by university policy on penalties for cheating and plagiarism.

**DEFINITION OF ACADEMIC DISHONESTY:** Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are: (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit. Please read the complete policy at http://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf.

**WITHHELD GRADES SEMESTER GRADES:** Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

**GENERAL EDUCATION CORE CURRICULUM:** The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core cur-riculum by regular assessment of student performance on these six objectives.

By enrolling in PHYS 2326 you are also enrolling in a Core Curriculum Course that fulfills the core objective component requirements in the chart that follows. This chart indicates: (a) The core objectives that are required to be taught in this course per the Texas Higher Education Coordinating Board (THECB), (b) How the required core objectives will be addressed.

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**GENERAL EDUCATION CORE CURRICULUM OBJECTIVES/OUTCOMES**

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment</th>
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<td>Critical Thinking Skills</td>
<td>To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.</td>
<td>addressed through the semester with home-work3</td>
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<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas though written, oral, and visual communication.</td>
<td>Addressed in co-requisite PHYS 2126 lab week1</td>
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<tr>
<td>Empirical and Quantitative Skills</td>
<td>To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>Addressed in the “AC Circuits” Experiment in the co-requisite PHYS 2126 lab.</td>
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<td>Teamwork</td>
<td>To include the ability to consider different points of view and to work</td>
<td>Addressed week 1 in co-requisite PHYS 2126 lab</td>
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<td>Personal Responsibility</td>
<td>To include the ability to connect choices, actions, and consequences to ethical decision-making.</td>
<td>Addressed week 1 while discussing course syllabus</td>
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<tr>
<td>Social Responsibility</td>
<td>To include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.</td>
<td>Addressed week 1 while discussing course syllabus</td>
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**STUDENTS WITH DISABILITIES:** To obtain disability-related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services promptly may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

**STUDENT WELLNESS AND WELL-BEING:** SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc. If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources: The Dean of Students Office (Rusk Building, 3rd floor lobby) www.sfasu.edu/deanofstudents 936.468.7249 dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202 www.sfasu.edu/human/services/139.aspx 936.468.1041

The Health and Wellness Hub “The Hub” Location: corner of E. College and Raguet St.
To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

**HEALTH SERVICES**

- Counseling Services: Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education

**On-campus Resources:**

**SFA Counseling Services**  
[www.sfasu.edu/counselingservices](http://www.sfasu.edu/counselingservices)  
Health and Wellness Hub (corner of E. College and Raguet)  
936.468.2401

**SFA Human Services Counseling Clinic**  
[www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)  
Human Services, Room 202  
936.468.1041

**Crisis Resources:**  
Burke 24-hour crisis line: 1.800.392.8343  
National Suicide Crisis Prevention: 9-8-8  
Suicide Prevention Lifeline: 1.800.273.TALK (8255)  
Crisis Text Line: Text HELLO to 741-741

**MENTAL HEALTH AND WELLNESS:** SFA values students' mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students' mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**

**SFA Counseling Services**  
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