### Course Information

**Course Title:** Technical Physics II (PHYS 2325)

**Department:** Department of Physics, Astronomy and Engineering

**Instructor:** Walter L. Trikosko

**Office Hours:** Monday-Friday or by appointment.

**Office:** 334 Miller Science Building

**Contact:** wttrikosko@sfasu.edu, tel: 468-3001

**Meeting Time:** 10:00 am - 10:50 am MW

**Meeting Place:** 334 Miller Science building

**Text:** *Essential University Physics* (3rd edition) by Richard Wolfson

**Prerequisites:** PHY 241 & MTH 233

**Corequisites:** PHY 242L

**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.

**Course Objectives:** By the end of the course, a successful student will be able to:

- Solve problems using principles derived from Maxwell’s equations.
- Construct and analyze DC and AC circuits.
- Demonstrate an understanding of fundamental wave motion as applied to mechanical and electrical waves.
- Solve problems involving geometrical and physical optics.

**Course Content:** The chapters on the calendar refer to the chapters in the text. They are:

1. Wave motion
2. Electric Charge, Force, and Field
3. Gauss’s Law
4. Electric Potential
5. Electrostatic Energy and Capacitors
6. Electric Current
7. Electric Circuits
8. Magnetic Force and Field
9. Electromagnetic Induction
10. Alternating-Current Circuits

**Textbooks:**

- *Essential University Physics* (3rd edition) by Richard Wolfson
- *Essential University Physics* (3rd edition) by Richard Wolfson

**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 in writing.
- 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.

**Program Learning Outcomes:**

1. **Knowledge:** The student will demonstrate knowledge and comprehension of the basic and applied fields of physics.
2. **Problem Solving:** The student will develop independent problem-solving skills.
3. **Lab Work:** The student will develop good experimental technique, including proper setup and care of equipment, conducting experiments and analyzing results in order to observe physical phenomena, assess experimental uncertainty, and make meaningful comparisons between experiment and theory.
4. **Written Communications:** The student will develop effective written communication skills by clear and concise problem solving, well-structured laboratory reports, and accepted formatting of research papers.
5. **Oral Communications:** The student will develop effective oral communication skills in oral presentations of problem solution, seminars, and oral presentations at scientific meetings.
6. **Professional Development:** The student will discover the protocols of the professional physicist by attending meetings or giving papers.

**Calendar:**

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**Midterms:**

- March 7, 2018: Midterm
- April 23, 2018: Last day to withdraw
- May 7, 2018: Final Exam 10:30 a.m. – 12:30 p.m.
SUGGESTIONS FOR MAKING A GOOD GRADE:

- Read your textbook.
- Attend classes regularly and punctually.
- Do your homework yourself.
- Review both lecture and laboratory material daily (Don’t cram; would you attempt a months worth of nutrition in a single meal?).
- Participate fully in lab exercises.
- Develop and practice good note taking skills.
- Ask questions in class.

ACADEMIC INTEGRITY (A-9.1): Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as 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/academic_integrity.asp

COURSE ASSESSMENT: The lecture part of the course requirements and method of evaluation are set by the individual instructor for the course. The method of evaluation is frequently based on outside exercises (homework) and scores from in-class and/or take-home examinations. In the determination of the final grade for both the lecture and the lab, the laboratory grade carries a weighting factor of one whereas the lecture part of the final grade carries a weighting factor of three. The same grade is recorded for both the lecture and the laboratory.

WITHHELD GRADES SEMESTER GRADES POLICY (A-54): 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 course work 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 for the purpose of computing the grade point average.

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 in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.


Throughout the semester problems will be assigned which 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 and will count 120 points toward your final grade.

EXAMS (360): There will be three exams as indicated on the calendar. These exams will consist of several problems taken from the problems at the end of the chapter, from the examples worked out in the text or from other sources. These exams will be given in room 323 at 6:00 p.m. on the dates indicated.

EXAM #1 Chapters 14 & 20-21
EXAM #2 Chapters 22-25
EXAM #3 Chapters 26-29

The student is expected to know and understand the equations required for the exams. These exams will count a maximum of 120 points each toward the final grade. Students will have four days 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 (120): The Final Exam will be comprehensive with emphasis on Chapters 30-32. The Final will be worth a maximum of 100 points toward the final grade and will be given Monday May 7, 2018 from 10:30 a.m. to 12:30 p.m.

LAB GRADE (200): The laboratory grade will count a maximum of 200 points toward the final grade (25% of the final grade). The lecture and lab grades will be combined into a single grade and the same grade will be recorded for the lecture and the lab.

FINAL GRADE (800): The maximum total points possible will be 800 and a final grade will be assigned according to the following:

- 720-800 A
- 640-719 B
- 560-639 C
- 480-559 D
- 000-479 F

ATTENDANCE: You are expected to attend every class. If you have more than three unexcused absences, your grade will be decreased by one letter grade. If you arrive more than 10 minutes late you will be marked as tardy and three tardy marks count as an absence.

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.