PHY 242.001
Technical Physics II
Fall 2018

James T. Adams, Ph.D.
Professor, Department of Physics, Engineering, and Astronomy
(936) 468-2064, adamsjt4@sfasu.edu, 207O STEM Building
Office Hours: Tuesday - Thursday 1:00pm-3:00pm or by appointment
Class lecture: MWF 8:00-8:50 in STEM Building room 201 (Room 401 Recitation)

Course Description: Presentation of the principles of sound, electricity, magnetism and optics. Computation of lecture and laboratory grades into one grade; same grade is recorded for both lecture and laboratory. 3 Credit Hours

Lab Manual: “Physics 242” departmental version available at local bookstores only.

Course Requirements:
Homework: There will be weekly homework assignments. Students will have one week after the homework is returned to discuss any possible error in the grading. After that time no change will be made in the grade.
Exams: There will be three night exams and a comprehensive final exam. The exams consist of three to six problems similar to those worked for homework. Students will have one week after the night exams are returned to discuss any possible error in the grading. After that time no change will be made in the grade.
Recitations: Recitations are at 1:00 pm on Mondays and last 55 minutes. An absence in recitation will be counted as an absence for class attendance. Recitation will be held in room 401 STEM Building. Recitations will begin Sep. 3rd.
Labs: The lab portion of the class will count for 25% of the final grade.

Co-requisite: PHY242L (with weekly labs and a final exam); Labs will begin the week of Sep. 3rd.

Pre-requisite: (PHY131 or PHY241) and (MTH 233 or MTH 234)

Grading Policy: Each major exam and the final will be graded on a 100-point scale. The final exam will be comprehensive. The final grade will be computed as follows:
12% Homework
25% Lab
15% Exam 1
15% Exam 2
15% Exam 3
18% Final
Letter grades are assigned as A 90.0-100, B 80.0-89.9, C 70.0-79.9, D 60.0-69.9, F <60.0.
**Attendance Policy:** If you have 3 or more unexcused absences or are late 6 times, your final grade will be reduced one letter grade. If you have 4 unexcused absences, you will receive an “F” in the course. If you are going to miss class for a university excused absence you should notify the instructor in advance. It is your responsibility to make arrangements to make up any missed work. If you are sick it is your responsibility to abide by university guidelines in dealing with your absence. It is the responsibility of the student to provide appropriate written documentation of any excused absence to Dr. Adams within one week of the absence. Failure to provide the documentation within one week of the absence will result in the absence being considered unexcused. Make up exams must be made up within two weeks of the missed exam.

**Program Learning Outcomes:**

- The student will demonstrate proficiency in the basic and applied fields of physics.
- 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.
- The student will develop effective written and oral communications skills, especially the ability to transmit complex technical information in a clear and concise manner.

**Course Content:**

- Wave Motion
- Electric Charge, Force and Field
- Gauss’s Law
- Electric Potential
- Electrostatic Energy and Capacitance
- Electric Current
- Electric Circuits
- Magnetic Force and Field
- Electromagnetic Inductance
- Alternating-Current Circuits
- Maxwell’s Equations and Electromagnetic Waves
- Reflection and Refraction
- Images and Optical Instruments
- Interference and Diffraction
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**General Education Core Curriculum:**
This course has been selected to be part of Stephen F. Austin State University’s core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: 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 curriculum by regular assessment of student performance on these six objectives. This semester this course is not scheduled to be assessed for the core curriculum objectives.

**Student Learning Outcomes:**
By the end of the course, successful students will be able to:
- 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.

**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](http://www.sfasu.edu/policies/academic_integrity.asp)

**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. 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/](http://www.sfasu.edu/disabilityservices/).