

Tentative Syllabus
Physics 333 - Wave Motion, Acoustics, and Optics
Fall 2015

Course Description: Four semester hours (3 lecture, 2 lab). An introduction to vibrational and wave motion with applications to acoustics, optics, and electromagnetic phenomenon.

Prerequisite: Physics 2425, 2426 or consent of the instructor.

Textbook:

Fundamentals of Physics by Halliday, Resnick, and Walker, 10th Edition
ISBN: 978-1-118-23071-8
Publisher: Wiley

Lecture Time and Place: MWF, 9:30AM – 10:45AM, Room: STC–114

Lab Time and Place: Thursday, 2:00PM – 4:00PM, Room: STC–114

Instructor: Albert Menchaca

Office Location: STC 344

Office Phone: 903-468-8765 (no voice mail)

Office Hours: Tuesday & Thursday, 2:00PM – 3:00PM or by appointment

Physics Office: 903- 886-5488 **FAX:** 903-886-5480

Email: albert.menchaca@tamuc.edu

Student Learning Outcomes:

- Have understanding of the concepts of oscillatory motion, superposition of waves, sound and electromagnetic waves, geometrical and physical optics.
- Have experience with common mathematical and experimental tools including solving problems for this course.
- Have skills collecting and analyzing experimental data.

Goals of the Course:

Students will gain knowledge on wave motion, acoustics, and optics. The properties of waves will be discussed. The effect of medium on the properties of waves will be covered. Students will gain knowledge in the reflection, interference, and diffraction of the waves. Students will understand the nature of lenses and their effect on the optical properties.

Grading Procedure and Scale:

Lab Grade: The laboratory grade counts 25% of the total class grade. The lab grading procedure will be discussed in lab. You must pass the lab to pass this course.

Lecture Grade: The lecture portion of the grade is determined from homework, tests, and the final exam as outlined below:

- Homework and attendance 15% (Late Homework penalty 10% each day)
- Two Tests 20% each for a total of 40%
- Final exam (comprehensive) 20%

Scale:

90 and above: A
80 and above but less than 90: B
70 and above but less than 80: C
60 and above but less than 70: D
Less than 60: F

Any decision to curve the grade will be taken at the end of the semester.

Missing an exam without first making arrangements for a make-up with the instructor (excused absence must be cleared before the exam) will automatically result in the failing grade. Missing other class periods will result in penalties as described under the attendance section below.

Lecture Topics (Tentative);

Chapter 15 Oscillations
Chapter 16 Waves - I
Chapter 17 Waves - II
Chapter 33 Electromagnetic Waves
Chapter 34 Images
Chapter 35 Interference
Chapter 36 Diffraction

Final Exam is on Thursday, December 17 at 8:00AM – 10:00AM

Attendance and Tardiness:

Students are expected to be on time and present for all class meetings. Excused absences can be arranged prior to the class period being missed for appropriate activities as determined by the instructor. If an emergency results in an absence, the student should contact the instructor as soon as possible informing the instructor of the emergency and inquiring about ways to make up the missed class. The instructor will make judgment on how to handle the situation. Possible reasons for excused absence are listed in the “Student’s Guidebook” under class attendance policy. Attendance and tardy records will be maintained and both may result in deductions from your overall grade.

Five unexcused absences will automatically result in a failing grade.

Classroom Behavior: Disorderly conduct which interferes with the normal classroom atmosphere will not be tolerated. The classroom instructor is the judge of such behavior and may instruct a disorderly student to leave the room with an unexcused absence or in more serious situations a student may be removed from the class with a failing grade.

Cheating and other Breaches of Academic Conduct: Academic cheating, plagiarism, and other forms of academic misconduct may result in removal of the student from class with a failing grade or may in extreme cases result in suspension or expulsion from the University as described in the “Code of Student Conduct” section of the “ Student’s Guidebook”.

Students with Disabilities: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamu-commerce.edu

Evaluation of Instruction: Students will be given opportunities to evaluate instruction near the end of the semester. The physics department utilizes a scantron graded questionnaire with statements regarding various elements of instruction and in addition utilizes an open ended form where students can make comments on all elements of the classroom. These comments are given to the instructor and department head soon after the grades are recorded. If students have concerns about the classroom experience during the semester, they should inform the instructor of those concerns and failing a satisfactory response may, as a last resort, contact the physics department head with those concerns.