



**Syllabus**  
**PHYS 333 - Wave Motion, Acoustics and Optics**  
**Fall 2025**

**Instructor:** Dr. Matt A. Wood

**Office:** STC 343 (Science Building)

**Dept Phone:** 903-886-5480

**Office Drop-in Hours:** TR 9:00-10:00 (but you are welcome to drop by any time)

**Email:** [matt.wood@tamuc.edu](mailto:matt.wood@tamuc.edu)

**Preferred Form of Communication:** Email (subject line: "PHYS333 ..."), office drop-by

**Communication Response Time:** generally within 24 hours (excluding weekends and holidays)

**Course Description:** An introduction to vibrational and wave motion with applications to acoustics, optics, and electromagnetic phenomenon.

**Textbook**

Required: OpenStax University Physics, volumes 1, 2, and 3, available free PDF download here: <https://openstax.org/subjects/science>.

**Lecture Time and Location:** Tue and Thr, 11:00 AM – 12:15 PM, Room: STC-107

**Lab Time and Location:** Friday: 2:00 – 4:50 PM, Room: STC-107

**Students Learning Outcomes**

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. See the last page of this syllabus for Topics and Course Schedule.

**Homework:** Each student must solve the assigned homework problems on his/her own time. Collaboration is encouraged, but students must understand what they did on the work and be able to explain it to the instructor.

**Penalty Schedule for Late Work:**

|            |      |
|------------|------|
| <24 hours: | -10% |
| <48 hours: | -20% |
| <3 days:   | -40% |
| <4 days:   | -60% |
| <5 days:   | -80% |

You can get 20% for your very late work, even if you hand copy the solution sets!

**Exams:** There will be two midterm exams and a comprehensive final exam. Make-up exams will only be allowed for excused absences. Your lowest exam score will be weighted less and your highest exam score will be weighted higher for this category. Exams are all cumulative, meaning that you'll see some questions on the second exam that cover material from the first exam.

**Weekly Quizzes:** There will be weekly quizzes, covering mostly material from the previous week, but also including important material from previous quizzes.

**Grading Percentages:**

- Lab/Tutorials: 20%
- Homework: 10%
- Weekly Quizzes: 10%
- 2 Midterms: 40%
- Final Exam: 20%

**Grading scale:**

|                    |
|--------------------|
| 90 % < A           |
| 80 % < B < 89.99 % |
| 70 % < C < 79.99 % |
| 60 % < D < 69.99 % |
| F < 60%            |

**General Classroom & Lab Policies**

No food is allowed during the class except for covered beverages.

No food, no drink, no open-toe shoes, no short pants in the lab.

Students are expected to be on time and present for all class meetings. 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 may result in a failing grade.

**Classroom Behavior:** Students are expected to be professional and respectful and take responsibility for their learning. If you find yourself struggling, the instructor, GA and LAs are available to provide extra help outside of class

**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”.

## **TECHNOLOGY REQUIREMENTS**

### **LMS**

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

Zoom Video Conferencing Tool

[https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom\\_Account.aspx?source=universalmenu](https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu)

## **ACCESS AND NAVIGATION**

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

## **COMMUNICATION AND SUPPORT**

If you have any questions or are having difficulties with the course material, please contact your Instructor.

## **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures/Policies**

#### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

### **University Specific Procedures**

#### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook

[http://www.tamuc.edu/student\\_guidebook/Student\\_Guidebook.pdf](http://www.tamuc.edu/student_guidebook/Student_Guidebook.pdf)

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

#### **TAMUC Attendance**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedures 13.99.99.R0.01](#)

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

#### **Academic Integrity**

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

#### Graduate Student Academic Dishonesty Form

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

**Use of AI Software Tools:** Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty  
13.99.99.R0.10 Graduate Student Academic Dishonesty

**Student Conduct:** All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.

<http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf>

**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 Room 162 Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148

[StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)

**Nondiscrimination Notice:** Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

**Campus Concealed Carry Statement:** Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&MCommerce campuses. Report violations to the University Police Department at 903- 886-5868 or 9-1-1.

## Topics & Course Schedule

\*The schedule is approximate and subject to change. All changes will be announced in class.  
Exams will be announced at least 1 week ahead of time.

|         |                                                   |
|---------|---------------------------------------------------|
| Week 1  | Vol 1, Ch. 15: Oscillations                       |
| Week 2  | Vol 1, Ch. 15: Oscillations                       |
| Week 3  | Vol 1, Ch. 16: Waves                              |
| Week 4  | Vol 1, Ch. 16: Waves                              |
| Week 5  | Vol 1, Ch. 17: Sound                              |
| Week 6  | Vol 1, Ch. 17: Sound                              |
| Week 7  | Vol 3, Ch 1: The Nature of Light                  |
| Week 8  | Vol 3, Ch 1: The Nature of Light                  |
| Week 9  | Vol 3, Ch 2: Geometric Optics and Image Formation |
| Week 10 | Vol 3, Ch 2: Geometric Optics and Image Formation |
| Week 11 | Vol 3, Ch 3: Interference                         |
| Week 12 | Vol 3, Ch 4: Diffraction                          |
| Week 13 | Vol 3, Ch 4: Diffraction                          |
| Week 14 | Vol 2, Ch 16: Electromagnetic Waves               |
| Week 15 | Vol 2, Ch 16: Electromagnetic Waves               |
| Week 16 | <b>Final exam</b>                                 |