

University of Mississippi
Department of Physics and Astronomy

Physics 212: Physics for Science and Engineering II
Summer 2025

Instructor: Dr. Saroj Pokharel
(spokhar1@olemiss.edu)

Class time and location: Monday through Friday
8:00 AM to 9:50 AM at Lewis 101

Office hours: Lewis Hall Room 104 (The Tutoring Room),
MWF 10:00 AM - 11:00 AM,
and by appointment

Course Description

This course is the second part of a two-semester calculus-based treatment of introductory physics. Topics include electricity, magnetism, electromagnetic waves and optics.

Course Corequisites

- Prerequisite: Physics 211 (Physics for Science & Engineering I)
- Corequisite: Physics 222 (Lab Physics for Science & Engineering II)

Course Objectives

Students should be able to complete the textbook learning objectives given in each section. Homework, in class activities and tests are intended to assess whether students have achieved these objectives. On completion of this course, students should be able to do the following:

- Apply a small set of fundamental physical principles to a wide variety of physical situations.
- Use these principles to explain a wide variety of physical phenomena.
- Use these principles to predict the behavior of a variety of physical systems.

Required Text

University Physics Volume 2 and 3, by OpenStax.

<https://openstax.org/details/books/university-physics-volume-2>

<https://openstax.org/details/books/university-physics-volume-3>

This is an open source textbook from OpenStax at Rice University. It is available for free online in a variety of formats, including html, pdf, Apple iBooks, and Amazon Kindle. If you prefer, you can also purchase a print version via OpenStax on Amazon.com. If you do choose to buy from Amazon, be sure to use the link on the textbook page at openstax.org to ensure that you get the official OpenStax print version.

Other Required Items

- *Homework on Blackboard and Webassign:* Students must purchase access to Webassign, which can be accessed through Blackboard (blackboard.olemiss.edu).
- *Scientific calculator:* Any calculator with trigonometric functions, exponential functions and scientific notation is acceptable. Online calculators are allowed, but may not be used for quizzes and exams.

Assessments

- Attendance - 10%
I encourage you to attend the class every day since learning and understanding physics requires a strong foundation and continuous engagement. In addition to regular class attendance, I strongly suggest that prior to each lecture, you prepare yourself by reading the relevant sections of the textbook.
- Homework - 25%
Homework sets will be assigned using the WebAssign online homework system that can be accessed through Blackboard. Written homework may also be assigned occasionally. It is very important to start early and finish homework on time. There is a 25% penalty for each submission beyond 3. To avoid this penalty, students should work each problem carefully on paper before submitting solutions. This will also be very helpful when studying for tests.
 - As scientists and engineers normally work in groups, students are encouraged to work together on homework to teach and learn from each other. However, each student is responsible for understanding all details of a problem solution.
 - Homework help sites such as Chegg are a liability, not a resource. Depending on sites like these is a sure way to do poorly on an exam. Instead, work with group members, the TA, or the instructor. Teaching peers is a great way to solidify your understanding!
 - There is no penalty for extensions past the due date during the first two days of class. **After the first two days, there will be a 20% penalty per extension. Extensions will be for two days past the due date.**
No extension are allowed for written homework.
- Exam 1, 2 & 3 - 40%
All exams are closed book (no books, notes or “cheat-sheets”). Calculators are allowed and a formula sheet will be provided.
- Final - 25%
July 24 at 8 AM at Lewis Hall Room 101 (Auditorium)

Test dates and topics are tentative and subject to change.
The final exam date is fixed and cannot be changed.

Grading Scale

- $92\% \leq A \leq 100\%$
- $88\% \leq A- < 92\%$
- $84\% \leq B+ < 88\%$
- $80\% \leq B < 84\%$
- $76\% \leq B- < 80\%$
- $72\% \leq C+ < 76\%$
- $68\% \leq C < 72\%$
- $64\% \leq C- < 68\%$
- $60\% \leq D < 64\%$
- $F < 60\%$

Class Schedule

The tentative class schedule will be provided to you during your first class. Exams will be conducted outside of the class. Exam hours can be found on the class schedule.

Policies

The University Creed

All students should uphold the University Creed and the regulations in the University's M-Book.

Academic Integrity

Every student of the University of Mississippi, by virtue of choosing to be part of the university community agrees to abide by the University of Mississippi Creed and the UM Academic Integrity Policy which covers academic integrity. Please consult the M-Book, Academic Integrity document for details on university policy and the academic creed.

Cheating is forbidden and will result in a zero grade on the assignment. A second case of cheating will result in an F for the entire course.

All materials distributed electronically and in hard copy in this class are protected under intellectual copyright. Any attempt to upload these documents onto the Internet (or to distribute them by some other means) or to profit from the distribution (by Internet or other means) of these documents constitutes theft and will be in violation of intellectual property law and the UM Academic Conduct Code unless expressly permitted for by the instructor. Accessing such materials for your own use is also in violation of the UM Academic Conduct Code.

Disability Access and Inclusion:

The University of Mississippi is committed to the creation of inclusive learning environments for all students. If there are aspects of the instruction or design of this course that result in barriers to your full inclusion and participation, or to accurate assessment of your achievement, please contact the course instructor as soon as possible. Barriers may include, but are not necessarily limited to, timed exams and in-class assignments, difficulty with the acquisition of lecture content, inaccessible web content, and the use of non-captioned or non-transcribed video and audio files. If you are registered with SDS, you must log in to your Rebel Access portal at <https://sds.olemiss.edu/rebel-access-portal> to request approved accommodations. If you are NOT registered with SDS, you must complete the process to become registered. To begin that process, please visit our website at <https://sds.olemiss.edu/apply-for-services>. SDS will:

- (1) Complete a comprehensive review to determine your eligibility for accommodations,
 - (2) If approved, disseminate to your instructors a Faculty Notification Letter,
 - (3) Facilitate the removal of barriers, and
 - (4) Ensure you have equal access to the same opportunities for success that are available to all students.
- If you have questions, contact SDS at 662-915-7128 or sds@olemiss.edu.

Audio and video recording

Audio and/or video recording of class lectures is not allowed unless explicit permission is given by the instructor. Permission will only be given if the student has a Student Disability Services request. In such cases, recordings may only be used by the student to whom permission is given and all recordings must be deleted at the end of the semester. Recordings may not be distributed online or elsewhere.