PHYS 107 Section 1-5 Fall 2024 Syllabus

I. Course Information

A. Description & Goals

This is a three credit-hour course which covers the basic concepts of physics. Topics to be covered include energy, forces, motion, matter, and waves. The goals of this course are to 1) provide an interesting, enjoyable and accurate introduction to the concepts of physics, and 2) hopefully instill a lasting awareness and wonder about our physical world.

B. Philosophy

Physics is the most basic science – it is the foundation of all other sciences. Therefore, it should be part of the general education for both science and nonscience students. Physics is essential for understanding the world around you as well as your relationship to it. Unfortunately, the mathematics and problem-solving skills required to "do" physics often deter average nonscience students from an encounter with the subject. In this course we attempt to reduce the requirement of mathematical skills and solve problems through group collaboration. We focus on improving your conceptual understanding in some of the most important topics like Energy, Force, Motion, Matter, and Waves. We help you see the connection between physics and nature of science subjects through the in-class activities. We also let you experience the science practices that capture important aspects of the work of scientists.

II. Instructor & TA Information

Professor: Dr. Bin Xiao, Lewis Hall Room 106**. E-mail:** bxiao@olemiss.edu

Class Time: Monday & Wednesday 10:00 – 10:50 am,
Class Location: CSTI 122
Dr. Xiao's Office Hours: MW 9:00-9:50 am and by appointment
Lab Time: Section 1, Tuesday 1:00 – 2:50 pm; Section 2, Tuesday 5:00 – 6:50 pm; Section 3, Wednesday 1:00 – 2:50 pm; Section 4, Wednesday 3:00 – 4:50 pm; Section 5, Tuesday 11:00 am – 12:50 pm.
Lab Location: CSTI 439.

III. References

The textbook for this class is:

Conceptual Physics, 13th Edition, by Paul Hewitt

The lab instructions for the laboratory part are:

Conceptual Physics Phys 107 Laboratory Manual,
(free downloads for each lab is available online here: https://relativity.phy.olemiss.edu/~thomas/)

IV. Course Objectives

On completion of this course, students should be able to do the following:

- Apply the fundamental physical concepts to a wide variety of physical phenomena.
- Use these concepts to predict the behavior of a variety of physical systems.
- Plan and carry out investigations

- Engage in argument from evidence.
- Effectively communicate information using scientific language.

V. Course Outline

Please see Blackboard for the Course Outline & Schedule.

VI. Course Requirements, Policies, and Evaluation Procedures

A. Expectations Class Preparation

- Students should expect to spend time outside of the class to read the textbook and watch videos before coming to the class.
- Study the textbook regularly. Do not wait until just before the test is imminent.
- Identify concepts or reasoning that were not clear to you from the reading.

In Class

- In-class participation, with synchronous interactions between students, is essential to mastering the outcomes of this course. During class students are encouraged to think aloud, ask questions of each other, and respond to one another's work. These interactions cannot be successfully duplicated if you are not present in class.
- We will use a classroom response system called TopHat to give in-class clicker questions. Students must purchase access to TopHat for use in class.
- Students must have access to their calculator and textbook during every class meeting.

B. Course Requirements

- **In-class participation:** 250 points

  Students are expected to attend all classes and finish activities on TopHat, participation points will be determined from Top Hat gradebook.

- **Tests**: 100* 3 = 300 points

  Three tests will be given during the semester. Several in-class quizzes will be given on TopHat. Those quiz scores will be counted as bonus points towards tests.

- **Labs**: 250 points

  Labs were normally hold for two hours weekly. You will be required to attend the labs and finish lab assignments to receive credit. More information about the lab will be provided by your TA. Please note that lab attendance is mandatory and **three missed labs will result in an automatic F for the entire course**.

- **Final Exam**: 200 points

  Final Exam Date: **Friday Dec 13th, 8:00 – 10:00 am**. The final exam is comprehensive and closed book.

- **Total Points**: 250+300+250+200 = 1000 points

C. Assessment Procedure

Products will be used to determine student achievement of the course objectives. All required assignments will be given a specific grade. Grades will be computed using the following scale:

Percentage = (Your Total Points / 1000) * 100%

A	B+	C+	D	F
100-93	87-89.99	77-79.99	60-69.99	Below 60
A-	B	C		
90-92.99	83-86.99	73-76.99		
	B-	C-		
	80-82.99	70-72.99		

VII. University Policies:

A. 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. If a second case of cheating occurs, this will result in an F for the entire course.

UM Creed The University of Mississippi is a community of learning dedicated to nurturing excellence in intellectual inquiry and personal character in an open and diverse environment. As a voluntary member of this community:

• I believe in respect for the dignity of each person • I believe in fairness and civility
• I believe in personal and professional integrity
• I believe in academic honesty

• I believe in academic freedom
• I believe in good stewardship of our resources
• I pledge to uphold these values and encourage others to follow my example

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B. Disability Access and Inclusion:

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 achieve- ment, 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, inacces- sible web content, and the use of non-captioned or non-transcribed video and audio files. If you are regis- tered 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.

C. 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.