Physics 211: Physics for Science and Engineering I
Spring 2022

Course Description: A calculus-based introduction to the classical mechanics of compact and extended bodies, fluids and solids and related phenomena, including oscillations, waves and sound. First part of a two-semester survey of classical physics. Students who passed a high school calculus course that included integrals may be allowed to enroll in Phys 221. Contact the department for more information.

Course Objectives:

- Develop conceptual reasoning and physical understanding.
- Improve numerical problem solving skills.
- Solve problems including kinematic equations, forces, conservation of energy and momentum, rotational equilibrium, hydrostatics, and fluid dynamics.
- Understand wave motion and the properties of sound.

Corequisite: Math 262 OR (Math 261 and Phys 201)
Corequisite: Phys 221: Lab Physics for Science & Engineering I

Lectures: TTh 11:00 am– 12:15 pm CT in Turner 205

Instructor: Dr. Anuradha Gupta

E-mail: agupta1@olemiss.edu

TA: Ms. Hollie Arnsdorff (hdarnsdo@go.olemiss.edu)

Office Hours: TTh 9:30 – 10:30 am or by appointment

Free Online Textbook: *University Physics Volume 1*
https://openstax.org/details/books/university-physics-volume-1

Course Material: Chapters 1 - 17 covered at the rate of about one chapter per week.

Zoom Link for any virtual activity/meeting:
https://olemiss.zoom.us/j/188888924

Other Required Materials:

- Calculator with trigonometric function keys (sin, cos, tan) not on your phone. If purchasing a new calculator, I recommend TI-30XS MultiView.
- WebAssign subscription

Grading: HomeWorks and Exams have the following weightage in the grand total

Online Homework	20 %
Offline Homework	20 %
Exam 1	18 %
Exam 2	18 %
Final Exam	24 %

Grand Total	100 %
In-class surprise test	+ 3% (bonus points)

Attendance	+ 3% (bonus points)

You can check your current grade using Blackboard.

Grading scale:

A	(percentage ≥ 92%)
A -	(90% ≤ percentage <92%)
B +	(87% ≤ percentage <90%)
B	(82% ≤ percentage <87%)
B -	(80% ≤ percentage <82%)
C +	(77% ≤ percentage <80%)
C	(72% ≤ percentage <77%)
C -	(70% ≤ percentage <72%)
D	(60% ≤ percentage <70%)
F	(percentage <60%)

Online homework:

Online homework will be due weekly (every Friday at 11:55 pm CT) and should be accessed through the **WebAssign** link under RESOURCE CENTER on Blackboard.

Online homework must be completed by the deadline for full credit, but can be completed after the deadline for partial credit by requesting an extension on WebAssign. In order to receive an automatic extension, you must request an extension on WebAssign before you view the 'key' and no later than 14 days after the homework due date. The portion of the homework that you complete after the deadline will be worth 50%. If you completed some problems before the original deadline, they will still be worth full credit.

Offline Homework:

Offline homework will be due via **Blackboard** on the due date (every Thursday at 11:55 pm CT). You need to upload your clearly written work as a single PDF file on Blackboard.

Exams:

There will be two mid-term exams and a **comprehensive** final, as shown on the schedule on the last page. Each exam will have two parts: multiple choice and free-response problems. The dates of the midterm exams and final will not change unless class is canceled for unforeseen reasons (weather, emergency, etc.). The chapters covered on each exam may change, if needed.

No make-up exams will be given unless arrangements are made **in advance.** If you miss an exam or the final without making prior arrangements, you will receive a zero.

Attendance and In-class surprise test (Bonus points):

Attendance:
Attendance to the class is mandatory but all students are strongly encouraged to attend. Bonus points (3%) will be given on attendance. You need to scan your ID on the attendance scanners upon entering the class room, so please don't forget to bring your ID. Your attendance will not be counted if you scan your ID after 11:15 am CT.

Quarantines are an important tool for controlling the spread of the virus. If you need to quarantine at

any point this semester, you should do so, and email me as soon as possible. In your email, state how long you expect not to attend class. I will not be able to provide recordings of class sessions, but we can work together to establish a plan for completing the necessary work. More information on quarantine protocols can be found at https://coronavirus.olemiss.edu/.

In-class surprise tests:
I'll be taking a few surprise tests throughout the semester. Bonus points (3%) will be given if you provide correct answers in these surprise tests. There will be no penalty if you provide wrong answers or miss the surprise test. This is another motivation to be present in the class so that you can earn some bonus points.

An example to compute final grades with bonus points:

For example, if a student gets the following grades:

online HW: 120/134
offline HW: 110/125
Exam 1: 80/100
Exam 2: 75/100
Final Exam: 164/200
attendance: 25/25
surprise tests: 12/20

then their final grade will be:

(120/134)*20 + (110/125)*20 + (80/100)*18 + (75/100)*18 + (164/200)*24 + (25/25)*3 + (12/20)*3 = 87.9% (which is a B+).

Academic Honesty:

Cheating is forbidden and will result in a zero grade on the assignment or exam. If a second case of cheating occurs, this will result in an F for the entire course. These consequences may be applied to both the copier and copy-ee. You are welcome to work together and help each other with the homework, but all submitted work should be your own. You should fully understand all the steps and be able to reproduce it independently.

University-wide Policies:

Academic integrity and honesty
Students are expected to adhere to the University of Mississippi Creed and the Standards of Honesty as described in Policy Code ACA.AR.600.001 and the M Book. Students are reminded that cheating in any form will not be tolerated. Performance on all tests and assignments shall represent the individual work of the student. Those who violate the Standards of Honesty will be reported and subject to the appropriate sanction, which may include expulsion from the University.
Intellectual property
All materials distributed electronically and in hard copy in this class are protected under intellectual copyright. Any attempt to upload these documents to a file sharing service or to profit from their distribution by any means constitutes theft and will be in violation of intellectual property law and the UM Academic Conduct Code unless expressly permitted for by the instructor.

Nondiscrimination policy
The University complies with all applicable laws regarding affirmative action and equal opportunity in all its activities and programs and does not discriminate against anyone protected by law because of age, color, disability, national origin, race, religion, sex, sexual orientation, handicap, or status as a veteran or disabled veteran.

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 approved through SDS, you must log in to your Rebel Access portal to request approved accommodations. If you are not yet approved through SDS, you must contact Student Disability Services (at 662-915-7128 or sds@olemiss.edu) so the office can (i) determine your eligibility for accommodations, (ii) disseminate to your instructors a Faculty Notification Letter, (iii) facilitate the removal of barriers, and (iv) ensure you have equal access to the same opportunities for success that are available to all students.

Examinations and last week of class
Regulations governing all examinations — A student's failure to appear for an examination without an acceptable excuse, inability to present valid identification, absence from the room during the course of an examination without the consent of the examiner, or attempting any portion of an examination without submitting his or her answers shall result in failure of the examination. Tardiness beyond 15 minutes forfeits a student's right to an examination.

Final examinations — A final examination, to be given at the time posted in the examination schedule, is required in each undergraduate course, unless the appropriate chair and dean have approved an exception. A student who has three or four final examinations in one day may arrange with the course instructor to take the noon or 7:30 p.m. examination at another time. In order to give a final examination at any time other than that shown in the posted examination schedule, an instructor must have prior approval of the department chair and dean.

- Last week of class — The following guidelines exist to allow sufficient time for students and instructors to prepare for final examinations. These guidelines apply to the week preceding final examinations for undergraduate courses held during Fall and Spring semesters.
- During the period of Wednesday through Friday of the last week of class, instructors are not to give exams, tests, or quizzes that contribute more than 10% of the final grade for a class. An instructor can obtain approval of the department chair and dean to give an exam, test, or quiz, of this weight, during this three day period. Instructors should return graded work and/or inform students of their grades on exams, tests, or quizzes prior to the beginning of finals week.
- Exceptions to the above statement are automatically made for lab-based courses, technical writing courses, seminar courses that assign a term paper, and senior design courses that assign a multi-faceted project in lieu of a final exam. Major projects of the above types, which contribute more than 10% of the final grade and which are due during this Last Week period, should be assigned in the syllabus at the beginning of the semester and any substantial change in the assignment should be made known to students before the drop deadline.

What is expected from the Students

1. Regular attendance is strongly encouraged. Attendance is very correlated with overall performance in this class, but students also need to make their attendance count!
   – Come to class alert and ready to participate.
   – Read the book sections in advance.

2. Students are expected to listen, focus, and participate.
   – Stay on topic during group discussions and practice.

3. Allot enough time for studying the text, reviewing the class notes, and working on the homework.
   – For each lecture hour, students should spend 2-3 hours working on physics outside of class. That equals 6-9 hours per week. Plan ahead and do not start the assignments at the last minute.
4. Students are expected to ask questions and seek extra help when they encounter topics, concepts, or problems that they don't understand. Most students will need at least occasional extra help.
   – Come to office hours. Email the instructor and set up an appointment if the office hours don't work for you.
   – Ask questions before, during, or after class.
   – Form a study group!

Before each class meeting, read the sections listed. This schedule may change slightly if needed.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1 1/17 – 1/21	MLK Day No classes	1.1 – 1.7 Syllabus		2.1 – 2.4	
Week 2 1/24 – 1/28	Last Day to Add	3.1 – 3.4		3.5 – 3.6 Offline 1 due	Online 1 due
Week 3 1/31 – 2/4		4.1 – 4.3		4.4 – 4.5, 5.1 Offline 2 due	Online 2 due
Week 4 2/7 – 2/11		5.2 – 5.6		5.6 – 5.7 Offline 3 due	Online 3 due
Week 5 2/14 – 2/18		**Exam 1**		6.1– 6.4 Offline 4 due	Online 4 due
Week 6 2/21 – 2/25		7.1 – 7.4		8.1 – 8.5 Offline 5 due	Online 5 due
Week 7 2/28 – 3/4	Deadline for Withdrawal	9.1 – 9.3		9.4 – 9.7 Offline 6 due	Online 6 due
Week 8 3/7 – 3/11		10.1 – 10.4		10.5 – 10.8 Offline 7 due	Online 7 due
Week 9 3/14 – 3/18	**Spring Break** (no class)	**Spring Break** (no class)	**Spring Break** (no class)	**Spring Break** (no class)	**Spring Break** (no class)
Week 10 3/21 – 3/25		11.1 – 11.4		12.1 – 12.4 Offline 8 due	Online 8 due
Week 11 3/28 – 4/1		**Exam 2**		13.1 – 13.7 Offline 9 due	Online 9 due
Week 12 4/4 – 4/8		14.1 – 14.4		14.5 – 14.7 Offline 10 due	Online 10 due
Week 13 4/11 – 4/15		15.1 – 15.3		15.4 – 15.6 Offline 11 due	Online 11 due
Week 14 4/18 – 4/22		16.1 – 16.3		16.4 – 16.6 Offline 12 due	Online 12 due
Week 15 4/25 – 4/29		17.1 – 17.3		17.4 – 17.8 Offline 13 due	Online 13 due
Finals Week 5/2 – 5/6		**Final Exam** **T 12:00 noon – 03:00 pm**			

Important Dates: See the academic calendar (https://registrar.olemiss.edu/spring-2022/)