

**Physics 213: General Physics I**  
**Fall 2025**

**Course Description:** This course is the first part of a two-semester algebra-based treatment of introductory physics. Topics include Newtonian mechanics, energy, rotational motion, fluids, oscillations and waves. Of the courses Phys 107, Phys 211, and Phys 213, only one can be counted toward a degree.

**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.

**Prerequisite:** (Math 121 and Math 123) or Math 125 or Math 261

**Corequisite:** Phys 223: Laboratory Physics I

**Lectures:**      Section 2: MWF 9:00 – 9:50 am in CSTI 122  
                     Section 3: MWF 1:00 – 1:50 pm in CSTI 122

**Testing:**        Section 2: W 5:30 – 7:00 pm in Brevard 134  
                     Section 3: W 5:30 – 7:00 pm in Brevard 134

**Instructor:**    Dr. Nathan Davis (call me Dr. Davis or Prof. Davis)

**Office:**         CSTI 450

**Phone:**        TBD

**E-mail:**        [nddavis5@olemiss.edu](mailto:nddavis5@olemiss.edu) (this is the best way to reach me)

**Drop-In Group Study:**

**Tuesday 1:00 – 2:00 pm (CSTI 137)**

**Wednesday 3:00 – 4:00 pm (CSTI 137)**

**1:1 appointment** can be scheduled by sending me an email ([nddavis5@olemiss.edu](mailto:nddavis5@olemiss.edu))

**Recommended Textbook:** College Physics, 12th edition by Serway, Vuille and Hughes.

**Required Materials:** Scientific calculator (not on phone) such as TI-30XS MultiView or TI-36X Pro.

<b>Grading:</b>	Pre-class Assignment	120 points (40 x 3 points each)
	Jump-start Problems	120 points (24 x 5 points each)
	Homework Problems	120 points (24 x 5 points each)
	Exam 1	120 points
	Exam 2	120 points
	Exam 3	120 points
	Final Exam	120 points
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	Total Possible	840 points

## Grading scale:

$772.8 \leq \text{points}$	A	(percentage $\geq 92\%$ )
$756.0 \leq \text{points} < 772.8$	A -	( $90\% \leq \text{percentage} < 92\%$ )
$730.8 \leq \text{points} < 756.0$	B +	( $87\% \leq \text{percentage} < 90\%$ )
$688.8 \leq \text{points} < 730.8$	B	( $82\% \leq \text{percentage} < 87\%$ )
$672.0 \leq \text{points} < 688.8$	B -	( $80\% \leq \text{percentage} < 82\%$ )
$646.8 \leq \text{points} < 672.0$	C +	( $77\% \leq \text{percentage} < 80\%$ )
$588.0 \leq \text{points} < 646.8$	C	( $70\% \leq \text{percentage} < 77\%$ )
$504.0 \leq \text{points} < 588.0$	D	( $60\% \leq \text{percentage} < 70\%$ )
$\text{points} < 504.0$	F	(percentage $< 60\%$ )

## Pre-class Assignment:

Before each class, you will watch the assigned videos and then complete a **short quiz on Blackboard**, due at the start of class. It is very important that you do this work in order to fully benefit from our in-class activities. If you are interested in reading about the pedagogical research that backs the flipped classroom approach, here is a good place to start: <https://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/>

## Jump-start Problems:

During class, we will do example problems (led by me) and practice problems (led by you). Over the course of the semester, there are 24 “jump-start” problems, where you will have the opportunity to start working on the problems during class and then will finish them later to turn in for credit, 5 points each. The solution is due **one week** after we start the problem in class, uploaded as a pdf to Blackboard.

## Homework:

Solutions to two problems, worth 5 points each, will be turned in via Blackboard on **Fridays** by 11:59 pm Central Time. You can write your work on paper and then use a free phone app (Adobe Scan, Tiny Scanner, etc) or a physical scanner to create the pdf to upload. Or, if you have a tablet, you can do your work on there and save it as a pdf.

## Late Homework and Jump-start Problems:

I will be posting the solutions to these problems on Blackboard shortly after the due date. Late work (submitted after the solutions post) will receive a zero. If you need an extension due to serious illness or personal emergency, email me on or before the due date to make arrangements.

## Exams:

Three midterm exams and a **mandatory comprehensive final**, as shown on the schedule on the last page. The dates of the 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 or in case of unforeseeable emergencies.

The lowest midterm exam score (including a zero) can be replaced with the final exam score, if the final exam score is higher than the lowest midterm exam score. At the end of the term, the Blackboard gradebook will show this adjustment in a column marked “Replace Lowest.” which will add on the point difference between your final exam and lowest midterm grade IF the final was higher.

**Attendance:**

Consistent lecture attendance is important for your learning and your grade. Please scan your ID at the scanners in the classroom when you enter every class you attend. **You will be able to make up any work you miss due to illness. Please do not come to class if you are feeling ill or are contagious!** If you do need to miss class due to illness, personal emergencies, university obligations, religious observances, and other circumstances, look at the notes from class posted on Blackboard and complete the practice problems and jump-start problems you missed to catch up before the next class.

**Plan for success:**

- **Before each class**, watch the posted lecture videos and complete the Blackboard quiz.
- **During each class**, keep your phone in your backpack to avoid temptation. Try each problem yourself to the best of your ability. Solving the in-class practice problems builds the problem-solving skills you will need to complete the homework and exam problems.
- **Early in the week**, start the homework so you have a chance to seek out help if necessary.
- **Anytime** you need it, seek out additional help from:
  - Supplemental Instruction– schedule on Blackboard.
  - Drop-In Group Study – work together with other students or ask me questions, schedule on first page of syllabus.
  - HPAO tutoring – schedule on their website soon.
  - Tutoring from lab TAs – schedule on lab website: <https://www.phy.olemiss.edu/lab/index.php>
  - Set up a 1:1 appointment with me by sending me an email to the address listed on the front page of the syllabus. Also do this if you need to talk about something confidential that requires privacy.

**Academic Honesty:**

You may work with other students on the in-class problems and homework, but you cannot copy their work. Make sure that all work submitted is your own, so that you would be able to fully explain it to me or redo a similar problem if asked. Uploading the materials from this class to Chegg, Coursehero, or other cheating websites or using any solutions that are posted there would violate the [UM Standards of Honesty](#). Consequences for academic dishonesty depend on the seriousness of the offense and will be at least a zero on the assignment or exam and may include an overall grade of F.

**Student Support Services:**

The University Counseling Center is a professional facility offered by the University of Mississippi to assist students, faculty, and staff with many types of life stressors that interrupt day-to-day functions. They offer individual counseling, couple's counseling, group counseling, stress management, crisis intervention, assessments and referrals, outreach programs, consultations, and substance abuse services. There is no fee for currently enrolled University students and everything you say to your counselor is confidential. You can contact the Counseling Center for information about mental health issues at <https://counseling.olemiss.edu>, [counselg@olemiss.edu](mailto:counselg@olemiss.edu), 662-915-3784, and 320 Lester Hall. You can schedule an appointment or get information about appointments by calling the UCC at 662-915-3784.

**Inclusion:**

I commit to creating a classroom environment that fully supports, values, and engages every student on their academic journey. You can help by treating yourself and your classmates kindly and with respect.

**Growth mindset:**

Having a growth mindset (“This feels difficult now, but I will understand it if I work hard.”) instead of (“I’m just not a physics person and will never be good at this.”) will enhance your learning **and** that of your classmates. Read more about growth mindset vs fixed mindset here: <https://tll.mit.edu/teaching-resources/inclusive-classroom/growth-mindset/>.

**University-wide Policies:**Attendance

The university requires that all students have a verified attendance at least once during the first two weeks of the semester for each course. If your attendance is not verified, you will be dropped from the course and any financial aid will be adjusted accordingly. Please see <http://olemiss.edu/gotoclass> for more information.

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](mailto: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.

Planned schedule: Please watch the videos for these sections before class each day.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1 8/25 – 8/29	1.3 Introduction		1.4		2.1 – 2.2
Week 2 9/1 – 9/5	Labor Day No class		2.3		2.4 HW 1, 2 due
Week 3 9/8 – 9/12	3.1 – 3.2		3.3		3.4 HW 3, 4 due
Week 4 9/15 – 9/19	4.1 – 4.3		4.4 <b>Exam 1 1-3</b>		4.5 HW 5, 6 due
Week 5 9/22 – 9/26	4.6 – 4.7		4.8		5.1 – 5.2 HW 7, 8 due
Week 6 9/29 – 10/3	5.3 – 5.5		5.6 – 5.7		5.8 – 5.9 HW 9, 10 due
Week 7 10/6 – 10/10	6.1 – 6.2		6.3 – 6.4		7.1 – 7.2 HW 11, 12 due
Week 8 10/13– 10/17	7.3 – 7.4		7.5 parts 1 and 2 <b>Exam 2 4-6</b>		7.5 part 3 HW 13, 14 due
Week 9 10/20– 10/24	8.1		8.2		8.3 HW 15, 16 due
Week 10 10/27–10/31	8.4		8.5 – 8.6		9.1 – 9.3 HW 17, 18 due
Week 11 11/3 – 11/7	9.4 – 9.5		9.6 – 9.7		9.8, 9.10 HW 19, 20 due
Week 12 11/10– 11/14	10.1 – 10.3		13.1 – 13.2 <b>Exam 3 7-9</b>		13.3 – 13.4 HW 21, 22 due
Week 13 11/17– 11/21	13.5 – 13.6		13.7 – 13.11		14.1 – 14.3 HW 23, 24 due
Break Week 11/24– 11/28	No class	No class	No class	No class	No class
Week 14 12/1 – 12/5	14.4 – 14.5		14.6		Optional: 14.7 - 14.13
Finals Week 12/8 – 12/12			<b>Final 213-2</b> <b>W 8:00 am</b>  <b>Final 213-3</b> <b>W 12:00 pm</b>		

