

SP 211 – GENERAL PHYSICS I

Sections 3323 and 5523

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Text:

- Physics for Scientists and Engineers, 6th edition, Paul A. Tipler & Gene Mosca

Why I am required to take physics? During the course of this semester, you will often hear me talk about the differences between education and vocational training. The mission of the US Naval Academy is to provide you with some of both, but this class is an *educational* element. An educated officer corps is crucial to the success of the U.S. armed forces, and a 21st century liberal education is incomplete without an understanding of the principles that govern our physical world. Education empowers sound decision-making; you will be ineffective and prone to mistakes without a solid understanding of physics.

A word about math: We will use calculus nearly every day in class, and most homework sets will require you to exercise the calculus you've spent so much time learning. I strongly urge you not to "tune me out" when the material becomes difficult. Lecture is your chance to ask me questions about anything you don't understand. Use it wisely!

Learning Outcomes:

- Learning Outcome 1: Know General Physics I concepts and use them qualitatively to draw general conclusions about physical situations.
- Learning Outcome 2: Apply General Physics I concepts to solve technical problems quantitatively using both symbolic variables and numeric values.
- Learning Outcome 3: Use vector mathematics reliably as a natural part of your approach to physics.
- Learning Outcome 4: Use mathematics from your Calculus I, II, III sequence reliably as a natural part of your approach to physics.

Classroom etiquette:

- Drinks are permitted, food is not.
- If you need to use the head, do so without interrupting class; no need to ask permission.
- No sleeping. If you are tired, feel free to stand in the back of the classroom.

Reading assignments: Read over the material that is going to be covered in class *before* the appropriate lecture. I will post up-to-date reading assignments on the class website with your homework assignments each week. Our time together in lecture will be most effective if you arrive in class with prepared questions.

Homework: I will assign one problem set every Tuesday using the *myOpenMath* online homework system. A link to the *myOpenMath* page is provided on the course website. Problem sets are due on Tuesdays. Late homework will incur a 25% penalty for the first week after the due date. Homework submitted following this one-week window will receive no credit.

- You are permitted to work together with others on your problem sets.
- I forbid the use of Chegg, CourseHero or other similar online homework help websites for graded homework. Generative AI may be used under AI usage framework AI-1.

Quizzes: I will administer one quiz per week at the beginning of each Tuesday period. Quiz problems will be taken directly from the that week's homework.

- Formula sheets are not permitted during quizzes
- All quizzes will be self-graded during lab or the next day's lecture. Please take quizzes in pencil and carry a suitable (colored) grading pen with you.

Tests: I will give three regular in-class tests during the semester. I have listed tentative test dates on the syllabus, but I may elect to change the dates depending upon the needs of the class.

- You are permitted to use the official, unaltered SP211 formula sheet during tests.

Lab policy: I will post the procedure for each week's experiment at the beginning of each week; review the experiment before arriving. The use of AI during lab is permitted when specifically required by instructions.

- Lab is your time to develop your physical intuition; it also represents a prime opportunity to ask me questions or discuss concepts (any concepts, not simply what we are doing in lab that day).
- Lab grades will be based entirely on the content of your online lab response forms which must be submitted at the end of lab.

Generative Artificial Intelligence: In accordance with [USNA Provost Notice 1531](#), homework assignments for this course fall under AI Usage Framework **AI-1**: "Use of AI to assist in organizing information while preparing to complete course work is permitted." Work done during lab exercises falls under AI Usage Framework **AI-5**; the use of AI is permitted when required by lab instructions. Any use of AI during in-class quizzes or tests is explicitly forbidden (Framework AI-0).

Extra Instruction (EI): I am happy to meet with you individually or in groups for extra instruction. I do not have regularly scheduled office hours, so email me to make an EI appointment. Appointments are the best way to guarantee a meeting, but feel free to drop by my office at any time. I am happy to answer impromptu questions as they come up.

Absences:

- **Excused Absences**
 - **Lab:** For planned absences or movement orders, make arrangements to perform the lab with another section. Keep me informed of your plans.

- **Test Days:** Inform me ahead of time, and we will arrange a mutually convenient time for you to take the test.
- **Unexcused Absences:** If you have an unexcused absence on a lab or test day, you will not be permitted to make up the work, and you will receive a zero for the test or the lab.

Grade Formulation:

	Percentage of total grade
Quizzes	20%
Homework	10%
Labs	10%
Tests	25%
Final Exam	30%
Professionalism	5%
TOTAL	100%

Grade Thresholds	
A	≥ 93%
A-	≥ 90%
B+	≥ 87%
B	≥ 83%
B-	≥ 80%
C+	≥ 77%
C	≥ 73%
C-	≥ 70%
D+	≥ 67%
D	≥ 60%
F	< 60%

Professionalism: Nearly all of you are used to academic success. Some of you may have earned the very first C or D of your life here at the Naval Academy, but you all earned excellent grades in high school. You will find that no matter how well (or poorly) you do at the Naval Academy, you will encounter failure much more often as a junior officer than you did here. All junior officers make mistakes; senior officers know this. As a result, you will often be judged by your resilience in the face of failure and your ability to avoid the same mistake twice. I will grade you by the same standard in this class.