

Introduction to Electromagnetism and Optics**Instructors:**

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Text: Physics for Scientists and Engineers 4th edition, by Douglas Giancoli, Volume 2, with Mastering Physics. Available at Amherst Books.

Personal Response System: We'll be using the PRS system in class. During a typical class, you will be asked to respond to a few multiple-choice questions relating to the topics you are learning. For some of these questions you will be asked to discuss the question with your classmates. You will be graded for both participating and submitting correct answers to these questions. In order to use the PRS system, you will need a "clicker," which you can borrow for the semester from IT. If you return it intact at the end of the semester, there will be no charge to you. If you lose or break your clicker, you will be responsible for the cost of replacement. **You should get your clicker from IT (Seeley Mudd 110) before the second class (Wednesday, Jan. 27).**

Assignments: In addition to reading roughly a chapter per week, you will be expected to complete a set of problems each week. Problem sets will be due each Wednesday at the beginning of class. You will not receive credit for homework turned in late, unless you have received an extension for a valid reason (illness, family emergency, etc.).

You will also be assigned some problems from Mastering Physics, an on-line homework and tutorial system. You will need to complete each Mastering Physics assignment before class each Wednesday as well. To access Mastering Physics, you will need the student access code that comes with your textbook. Go to masteringphysics.com to log in. You will also need the Course ID: PHYSICS17

Get started on the homework early. Do not wait until the last minute!

Exams: There will be two midterm exams during the course. These will be held in the evenings in **Merrill lecture room 2:**

Midterm #1: Wednesday, Feb. 24, 7-9 pm.

Midterm #2: Wednesday, Mar. 31, 7-9 pm.

There will be a three-hour comprehensive final exam to be scheduled by the Registrar. The exams will

cover material from the text, lectures, homework and labs.

Labs: The labs are an integral and important part of the course. Some of the labs will have formal written lab reports; others will be evaluated by informal “exit interviews.” You **must** complete **all** of the labs satisfactorily to pass the course. You will be provided with a laboratory notebook at the first lab meeting. It should be used only for this class since notebooks may be collected for grading at the end of some lab meetings.

The lab will meet most Mondays or Tuesdays at 2 p.m., depending on the section, in Room 208. Please come in promptly at 2 p.m. since the initial part of lab time will be used for lab instruction, safety recommendations, etc. You should anticipate spending the full 3 hours (2 PM - 5 PM) completing the lab.

The laboratories provide an important complement to the lectures, readings and problems. In Physics 17 this is especially true since the laboratory component runs somewhat independently of the lecture material. The laboratory syllabus gives the schedule of labs. Details of what we expect will be described in the first lab period, the second week of class. Labs are a required part of the course. **They cannot be skipped.**

Grades: Your grade for the course will be based on all aspects of the course:

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|---------------|-----|
| Homework | 10% |
| PRS | 5% |
| Midterm exams | 35% |
| Labs | 25% |
| Final Exam | 25% |

INTELLECTUAL RESPONSIBILITY

Homework Assignments – You are encouraged to work with other students on your homework, but what you turn in must represent your own understanding of the problem. Copying a solution from another student or from a published source will be considered a violation of intellectual responsibility. This rule applies to solutions posted on the internet (such as, but not limited to, cramster.com).

PRS – You must submit your own answers to the PRS questions. Do not look at what other students are submitting with their clickers. Never press the buttons on another person’s clicker or ask someone to submit answers for you.

Lab work – Discussion and cooperation between lab partners is encouraged during the lab session. Both partners should share equally in the collection of data. However, each student must keep a **separate** record of the data and do all calculations **independently**. It is important to preserve the integrity of data. Use of any data or calculations other than one's own and "fudging" of data (adjusting a number to something other than what you observed) are considered violations of the principles of Intellectual Responsibility. Lab reports must be written entirely by you and must represent your own understanding of the work you have done. You cannot simply copy what others have told you.

Exams – The exams will be closed book. You will not be allowed to collaborate with anyone during an exam. What you submit must be entirely your own work.

Approximate Syllabus

| Week of | | |
|----------|------------------|---|
| Jan. 25 | Chapter 21 | No Lab |
| Feb. 1 | Chapter 22 | HW 1 due Lab 1: Measurement |
| Feb. 8 | Chapters 22 & 23 | HW 2 Lab 2: DC Circuits (Formal) |
| Feb. 15 | Chapters 23 & 24 | HW 3 Lab 3: Introduction to the Oscilloscope |
| Feb. 22 | Chapters 24 | HW 4 No Lab Exam: Feb. 24, 7 – 9 p.m. |
| March 1 | Chapter 25 & 26 | HW 5 Lab 4: Capacitors |
| March 8 | Chapter 27 | HW 6 Lab 5: Faraday's Law |
| March 15 | Spring Break | |
| March 22 | Chapter 28 | HW 7 Lab 6: Induction |
| March 29 | Chapter 29 | HW 8 No Lab Exam: March 31, 7 – 9 p.m. |
| April 5 | Chapter 30 | HW 9 Lab 7: RLC Circuits (Formal) |
| April 12 | Chapter 31 | HW 10 Lab 8: Properties of Light |
| April 19 | Chapter 32 | HW 11 Lab 9: Geometrical Optics (Formal) |
| April 26 | Chapter 33 | HW 12 Lab 10: Interference and Diffraction |
| May 3 | Chapter 34 & 35 | HW 13 No Lab |