

Course Syllabus

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Physics 7C

Electromagnetic Waves, Optics, Relativity and Quantum Physics

Instructor

Professor Mina Aganagic,
Lecture: TuTh 2:00-3:30 PM, 4 LeConte

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GSIs

Stephen Randall
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Office hours: Tu, 1pm-3pm, Physics 7C Course Center (109 LeConte)

Jaewon Kim
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Office hours: M 2:30-3:30pm, W 3:30-4:30pm, Physics 7C Course Center (109 LeConte)

Prerequisites

- Physics 7A-B
- Math 1A-1B
- Math 53, 54 (Math 54 must be taken concurrently, if it has not been completed).

Textbooks

MODERN PHYSICS

- **Author:** Serway
- **Publisher:** Cengage L
- **Edition:** 3RD 05
- **ISBN:** 9780534493394

PHYSICS FOR SCIENTISTS & ENGINEERS VOL 3 (custom)

- **Author:** Giancoli
- **Publisher:** Pearson (C)
- **Edition:** 4TH 08
- **ISBN:** 9780558229047

MASTERING PHYSICS (access code)

- **Author:** Young
- **Publisher:** Pearson
- **Edition:** 13TH 12
- **ISBN:** 9780321742001

LAB MANUAL (available for purchase in Copy Central on Bancroft)

Grades:

- Labs 5%
- Homework 10%
- Quizzes 10%
- First Midterm 20%
- Second Midterm 20%
- Final Exam 35%

Topics and HW Assignments

Week No.	Week Dates	Topics (<i>approximate guide only</i>)	Suggested Reading (updated throughout the semester)	Lab
1	Aug 28-30	Maxwell's Equations and Electromagnetic Waves	Giancoli: sections 31.1 - 31.4	No lab
2	Sep 2-6 (Sep 2: Mon - Labor Day)		Giancoli: sections 31.5 - 31.8	No Lab
3	Sep 9-13	Electromagnetic Waves		No Lab
4	Sep 16-20	<i>Optics</i> <i>Interference and Diffraction</i>		Reflection & Refraction
5	Sep 23-27	Interference and Diffraction		Geometric Optics
6	Sep 30 - Oct 4 Midterm #1 -- October 3rd (in class)	Diffraction		No Lab
7	Oct 7-11	Special Relativity		No Lab
8	Oct 14-18	Special Relativity		Diffraction & Interference
9	Oct 21-25	Special Relativity		Polarization
10	Oct 28 - Nov 1	Special Relativity		Michelson Interferometer
11	Nov 4-8 Midterm #2 -- November 7th (in class)	Special Relativity		No Lab
12	Nov 11-15	Special Relativity		No Lab

13	Nov 18-22	Quantum Mechanics		Photoelectric effect
14	Nov 25-29 (Nov 28-29: Th/Fri Thanksgiving)	Quantum Mechanics		No Lab
15	Dec 2-6	Quantum Mechanics		Atomic Spectra
16	Dec 9-13	RRR Week		
17	Dec 16-20	Final Exam Tue. Dec. 17, 8-11AM, Location TBD		

Homework Policy

Homework will be assigned through Mastering Physics and will be due at the beginning of lecture on Thursdays. Late homework will not be accepted without prior permission from the instructor.

Missed Exam Policy

There are no make-up exams. If you need to miss an exam for a valid reason, you must notify the instructor and the GSI in writing, well before the start of the exam. If your absence is approved, the following exam will count for the missed one (for example, were you to miss midterm 1, midterm 2 will count for 40% of your grade. If you miss midterm 2, the final exam will be 55% of your grade.)

Missed Labs

For each lab you do not complete, the your letter grade for the course will drop a level (e.g. from A to A-). With prior approval from the GSI, you can miss a lab section and make it up with either in another section, or the next time there is a lab. One lab set-up will remain in the back of the lab room for make-ups the following week. The make-up can only be done during a lab section with a GSI present. (The last lab has no make-up.)

You must finish the pre-lab questions for a given experiment *before* the lab session. GSIs will be collecting the answers at the beginning of each lab session. The pre-lab problems for each experiment are located towards the beginning of that experiment's chapter in the lab manual. Pre-labs and during class lab work count for half the points! Lab write-ups are due by the end of the lab period. **Write neatly.**

Course Summary:

Date	Details
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Date	Details
	Lab #1 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026761)
	Lab #2 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026762)
	Lab #3 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026763)
	Lab #4 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026764)
	Lab #5 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026765)
	Lab #6 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026766)
	Lab #7 (https://bcourses.berkeley.edu/courses/1485481/assignments/8026768)
	Midterm #1 (https://bcourses.berkeley.edu/courses/1485481/assignments/8029498)
	Midterm #2 (https://bcourses.berkeley.edu/courses/1485481/assignments/8029499)
	Quiz #1 (https://bcourses.berkeley.edu/courses/1485481/assignments/8023773)
	Quiz #2 (https://bcourses.berkeley.edu/courses/1485481/assignments/8035657)