

Physics H7C, Fall 2013
Department of Physics, University of California, Berkeley

Instructor:

Professor Adrian T. Lee
443 LeConte Hall
Adrian.Lee@berkeley.edu
Office Hours: Tuesday and Friday, 11am-12pm, 396 LeConte

Lectures:

Tu/Th 9:30-11:00AM, Room 2 LeConte

Texts:

Hecht, Eugene, "Optics," Fourth Edition, Addison Wesley
Tipler and Llewellyn, "Modern Physics," Sixth Edition, W.H. Freeman and co.

Teaching Assistant:

Eric Dodds, edodds@berkeley.edu

Discussion Sections:

Students are responsible for participation in a one-hour discussion section each week. These sections provide the opportunity to see worked example problems, ask general questions, to discuss the subject covered in lectures or homework, and to exchange ideas with TA's and other students.

Homework:

Weekly problem sets will be assigned, due Friday at 5pm. Turn in the problem sets to the box in LeConte. Your lowest HW score will be dropped. Homework is a very important part of the learning process. You are encouraged to discuss the problems other students, TA's, and the instructor, but you should not share your solutions with others. Written solutions should be your own. Generally, homework and examinations will be returned by the teaching assistant.

Laboratory:

Purchase the Laboratory Manual (and homework and exam solutions) at Copy Central, 2560 Bancroft. Laboratory reports should be a maximum of three pages long and should be handed in the day after the laboratory by 5pm. All laboratories must be completed. One make-up laboratory is permitted, and the setups will be available the week following the lab. If you are missing a lab, there will be a deduction of 1/3 of a letter grade on your final grade e.g. A becomes A-. Material from the laboratories may appear on exams.

Examinations:

There will be two midterms and one final exam. The midterms dates are roughly:

- First week of October and first week of November. All exams are closed book—you will be allowed one 3"x5" card (both sides) handwritten (or size 14 font or larger computer) notes for each MT and three for the final.

Grades:

20% Homework, 10% Laboratory, 15% First Midterm, 15% Second Midterm, 40% Final

Course Webpage: bspace.berkeley.edu

Clickers:

- Clickers are required for lecture. You will receive credit for participation only, not for correctness.
- Clicker participation is extra credit: your clicker percentage will replace 2 percentage points of your total exam weighting only if your clicker percentage is higher than your exam percentage. We will start using clickers on the second week of lecture, but we will start counting the extra credit in the third week of class.
- It is your responsibility to bring a functioning (with working batteries), properly registered iClicker (iclicker.com) to lecture every day. There is a web based interface for iclicker at lower cost.
- There are NO makeups for clicker questions. We will drop your 3 lowest days of clicker scores.
- You must register your clicker with your name and student ID through the iClicker website (www.iclicker.com/support/registeryourclicker/) to receive credit. If your iclicker is incorrectly registered you will not receive clicker credit.

Course Center: 109 Le Conte

- 7C GSI office hours are held in the course center.
- The course center is designed to facilitate group work. It will be open during business hours whether or not there are office hours being held, so feel free to come to work individually or in groups any time.

<u>Week</u>	<u>Starting Date</u>	<u>Lecture Topic and Reading</u>	<u>Problem Set</u>	<u>Lab</u>
1	Aug. 26	Electromagnetic Waves Hecht 3.1, 3.2 , 3.3		No Lab
2	Sept. 2	Reflection, Refraction, Polarization Hecht 4.1-4.2, 4.3,4.4 , 4.5-4.7, 8.1, 8.2, 8.6		No Lab
3	Sept. 9	Geometric Optics Hecht 5.1, 5.2, 5.4, 5.7	3.3, 4.21, 4.46, 4.49, 4.63, 4.65	No Lab
4	Sept. 16	Interference Hecht 9.1, 9.2,9.3,9.4	8.17, 8.42, 5.6, 5.32, 5.36, 5.54, 5.65, 5.78, 5.84	Reflection and Refraction of Light
5	Sept. 23	Interference+Diffraction Hecht 10.1, 10.2	9.3, 9.8, 9.12,9.17,9.32, 9.34	Geometric Optics
6	Sept. 30	Relativity I Tipler Ch 1 MT1	10.7,10.8,10.11,10.28, 10.29	No Lab
7	Oct. 7	Relativity II Tipler Ch 2.1-2.5		Michelson Interferometer
8	Oct. 14	Quantum Nature of Light Tipler Ch 3.1, 3.2, 3.3,3.4		Diffraction and Interference
9	Oct. 21	Nuclear Atom Tipler Ch4: 1,2, 3 ,4,5	Chapter 3: 23, 47, 51 Chapter 4: 54, 58 Chapter 5: 42, 43, 45	Polarization
10	Oct. 28	Wave properties of particles Tipler Ch5: 1,2,3,4,5,6,7		No Lab
11	Nov. 4	Quantum Mechanics Tipler Ch6: 1-6 MT2		No Lab

12	Nov. 11	Atomic Physics Tipler Ch7, not required	CH 6: 27, 46, 47, 56, 58, 60	No Lab
13	Nov. 18	Solid State Physcs Tipler Ch10, not required		Photoelectric Effect
14	Nov. 25 Thanksgiving	Particle Physics Tipler Ch 12, not required		No Lab
15	Dec. 2	Cosmology Tipler Ch13, not required		Atomic Spectra