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Instructor	Lecture Info	Instructor Office Hours
Matthias Reinsch	MTuWTh, 8:10 AM - 9:30 AM	Friday, 9:00 AM – 11:00 AM
<b>Office:</b> 386 LeConte [Office hours NOT here]	Location: 1 LeConte	Location: 105 LeConte
<b>Office Hours in 105 LeConte</b>		
<b>Email:</b> mreinsch@berkeley.edu		

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**Graduate Student Instructors:**

Emin Arakelian	<a href="mailto:emin@berkeley.edu">emin@berkeley.edu</a>	D/L 102, 104 Office Hours: MTuWTh, 2:00 - 3:00 PM
Mohandas Pillai	<a href="mailto:mpillai@berkeley.edu">mpillai@berkeley.edu</a>	D/L 101 Office Hours: Mon,Wed, 12:00 - 1:00 PM
Ari Zitin	<a href="mailto:zitin@berkeley.edu">zitin@berkeley.edu</a>	D/L 103 Office Hours: Tues,Thurs, 4:00 - 5:00 PM

**7A Course Center:** 105 LeConte, for Office Hours and for working with other students. You may attend the office hours of any GSI.

**Course Webpage:** [bcourses.berkeley.edu](http://bcourses.berkeley.edu)

**Prerequisites:** MATH 1A is a prerequisite. MATH 1B should be taken concurrently.

**Texts:**

- D. C. Giancoli, *Physics for Scientists and Engineers*, Volume 1 (custom edition for the University of California, Berkeley), 4th edition. We will cover chapters 1 through 16, including most sections marked “Optional.” You will generally be expected to read those sections of the book relevant to a given lecture before class. This is a **required** text.
- 7A Workbook, by Birkett and Elby, which will be packaged with Giancoli at the student bookstore. These will be used in section and are required.
- Mastering Physics. The workbook and Giancoli, along with Mastering Physics, are being sold as one unit.

**Exams and grades:** There will be two midterm examinations and a final exam. All exams are during regular lecture hours. Dates are listed below. Exams cannot be rescheduled and must be taken at the scheduled time. Anyone with an unresolvable conflict with exam dates needs to contact the instructor.

Midterm 1, July 6  
Midterm 2, July 26  
Final Exam Part 1, August 10  
Final Exam Part 2, August 11 [You must take both Part 1 and Part 2]

Grades will be determined from a weighting of all the elements of the course as follows:

1st midterm exam 20 %  
2nd midterm exam 20 %  
Final exam 40 % [See Clicker discussion below]  
Homework 14 %  
Discussion, Laboratory 3 %  
DL Quizzes 3 %  
(the distribution of the 3% between participation and quizzes will be at each GSI's discretion)

A grade of "Incomplete" will only be given under dire circumstances beyond a student's control, and only when work already completed is of at least C quality.

University guidelines specify that in lower division courses, the total percentage of students getting an A should be roughly 25%, the percentage of students getting a B should be roughly 40%, and the percentage of students getting a C should be roughly 35%. We will be following these approximate guidelines. The grade of D or F will also be given to a small percentage of students displaying especially poor performance.

**Clickers:** We will use clickers in lecture to facilitate interaction and for reading quizzes. Clickers are required.

- After you take the final exam, your clicker score for the whole course will be compared with your final exam score. *If your clicker score is lower*, then your final exam score will be 40 % of your overall course grade as stated above and your clicker score will not affect your course grade. *If your clicker score is higher*, then your final exam score will be 33 % of your overall course grade and your clicker score will be 7% of your course grade.
- The page numbers for the reading quizzes will be posted on the bCourses site. On average, each lecture will cover 16 pages of the text. Thus, a one-day reading quiz will cover about 16 pages, a two-day reading quiz will cover about 32 pages, etc. The purpose of the reading quizzes is to check that you did a first reading of the material (things like the slope of  $x$  plotted with respect to  $t$  is the instantaneous velocity); reading quizzes do not involve difficult problem solving.
- There are NO makeups for clicker questions.
- We will drop your 3 lowest clicker scores.
- You must register your clicker on bCourses.

**Homework Subscription:** All of our homework will be done through an internet subscription service, Mastering Physics. You can register for your Mastering Physics subscription by either purchasing a registration card along with your textbook, or on-line at the Mastering Physics site. Your subscription SID must match your actual UC Berkeley SID to receive homework credit for the course. You can log on to our homework service at this address: <http://www.masteringphysics.com>

To log in to Mastering Physics, you need:

- Student Access Code: purchase at the bookstore or on the Mastering Physics website
- Student ID: your 8-digit Cal student ID
- Course ID (note the C before the 2016): BERKELEYSUMMERSESSIONC2016PHYS7A
- UC Berkeley Zip Code: 94720

**We strongly encourage you to try logging on to Mastering Physics today! If you have any problems logging in, email us immediately, include the phrase “Mastering Physics” in the subject.**

**Homework:** Physics is a subject learned by doing, and at the level of Physics 7A, this means doing physics problems. Working on homework problems is critical to your learning the course material. You will have a weekly problem set of approximately 10 problems of varying difficulty, due as listed on the Mastering Physics website. Assignments will appear on your Mastering Physics account approximately 7 days before they are due. The first assignment “Introduction to MasteringPhysics” is not graded, and is really a worksheet on using Mastering Physics. The second assignment “Homework 1” is your first real homework set of the semester.

MasteringPhysics purports to be an on-line physics homework system, and thus by extension it would seem that students should do their homework on-line, in front of the computer. You are discouraged from doing so. Rather, we strongly recommend that every week, after the homework is posted, you print out the homework from the computer, and then you go away from the computer and complete your homework assignment on blank paper. After you have completed the assignment, go back to the computer, and input your answers. Then, for those problems that you got wrong, go back to your written work and look to see where a mistake was made. Make sure that you write a coherent argument for each problem on your written solutions so that you can check your work. After you have completed a homework assignment, save your written solutions, and this way you will have a written record of how you did the homework problems that you can refer to later when studying for exams.

**Late homework will not be accepted.** We will, however, drop your lowest homework score. The lowest-homework drop is designed to cover normal circumstances such as illness, family emergencies, etc. We encourage you to work with your peers on homework and learn from each other. However, when you submit an assignment on-line, you are stating that the solutions that you are presenting are *your own*, and not copied out of a book or from a friend. You will only learn from doing the problems if in the end you can formulate your *own* solutions! Violation of this policy is considered cheating.

Note, with Mastering Physics you have six chances to submit each homework part for grading, with a penalty for each submission. Hints are available on-line, but you will receive a little extra credit for not using them.

**Discussion/Laboratory (DL) Sections:** DL sections meet four times a week, for two hours, EVERY week. Your Lab Section and your Discussion Section meet in different rooms, so check your schedule carefully. Bring your 7A Workbook to your DL sections.

Learning physics means *doing* physics, which in terms of Physics 7A means discussing physics concepts, working in the laboratory, and working (many) physics problems. Your Discussion/Laboratory Sections (“DLs”) are designed to help you learn the course material by working with it in as many ways as possible.

In most of your DL sessions you will be working in groups, with help from your GSI, on materials that we have developed to do the following: help improve your conceptual understanding of the course material, see how the material relates to everyday life, and build strong problem solving skills for each topic covered in the course. The goal is for *you* to learn how to do physics. The sections will thus not be based on your GSI lecturing or solving sample problems on the board while you just watch. We expect all students to attend and participate in sections. You will not be graded on your performance in solving worksheet problems; they are, rather, for your practice, and to assist and guide you in learning the material.

**Labs:** In most weeks, as shown on the Lab Schedule, you will complete laboratory exercises that are also designed to help you explore the main course concepts. **Lab sections meet every week** regardless of whether there is a lab for that week (when there is no lab, a quiz will be held during your lab section; see “Quizzes” below.). Your work for the labs must be completed on the handouts found in your Physics 7A Workbook. You will hand in your work before you leave the lab. Labs will be graded out of 2 points, with the possibility of a bonus point for exceptional labs. Your GSI will follow this rubric:

2	The lab is mostly or entirely correct.
1	The lab shows serious flaws in understanding of the material.
0	The lab was not turned in.

Because our labs are closely integrated with the rest of the course, they must be completed when scheduled. If for a valid reason (e.g., illness) you must miss your DL section’s lab time, follow these steps to **make up the lab immediately, during the same week that you missed it:**

1. Find a lab section that fits in your schedule. The name and email address of the GSI teaching that section are listed above.
2. Email that GSI to ask whether you can complete the lab in their section. CC your regular GSI on this email, so that your GSI has a record of when you plan to complete the lab.
3. Complete the lab, and hand it in to the GSI in whose section you completed it. Do not hold on to the lab to hand to your GSI later.
4. Your GSI will return the graded lab to you, and your grade will appear in the bcourses gradebook like a normal lab.

Should you fail to make up the lab during its scheduled week, we will also leave one set-up in the room for an additional week. If necessary at one time during the semester with approval from your GSI, you may make up a lab in a different DL section the following week. These make-ups must occur during a regularly scheduled lab section. Labs are not available for makeup after the following week. **Uncompleted labs will count as a "zero" in computing your course grade. In addition, your final course grade may be further reduced by 1/3 letter (B+ to B, etc.) for each missing lab.**

**Quizzes:** Quizzes will be given in your lab section when there is no lab scheduled. Each quiz will take approximately 15 minutes and will be a single problem that is very closely related to a HW problem that you have already turned in. Your quizzes will be primarily graded on your solutions, not your answers. Your solutions must clearly demonstrate your reasoning with words, diagrams, and equations. The quizzes are intended to give you practice working out exam-style solutions. The quizzes are closed book; your GSI will provide all potentially useful equations along with the quiz. We will drop your lowest quiz grade. **There will be NO makeup quizzes.**

Quizzes will be unique to each section and graded out of 2 points. An extra point will be awarded to exceptionally clear work with no errors. Your GSI will follow the rubric:

2	The student demonstrates a good understanding of the concepts and provides a clear and correct plan to solve the problem. The student either gets the right answer or would have gotten the correct answer if not for minor algebraic errors.
1	The student demonstrates a partial understanding of the concepts and provides the beginnings of a plan to solve the problem.
0	The student shows no understanding of the concepts or did not take the quiz.

**Accommodations:** If you need disability-related accommodations in this class, if you have emergency medical information you wish to share with the instructor, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately. Please see him after class or arrange to meet him at his office.

**If you are in trouble** (behind in homework, doing worse in the course than you would like, etc.) for whatever reason, please let us know. We'll try to help! Additional help is available through the Student Learning Center (Golden Bear Center), the Honors Society, the Society of Physics Students, and the Physics Scholars Program. Inquire in the Physics Department Undergraduate Student Services Office (368 LeConte Hall) for further information. **There is quite a lot of material in this course, and not a lot of time to learn it. There are many resources available to help you. We strongly encourage you to take advantage of them.**

**Intellectual Honesty:** The student body of UC Berkeley has adopted the following honor code. "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The hope and expectation is that you will adhere to this code.

*Collaboration and Independence:* Reviewing lecture and reading materials, working practice problems, and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, when you submit an answer to MasteringPhysics or a hard-copy assignment to your GSI, you are stating that the answer/solution is your own work and not copied from a book, website, friend, or other animate or inanimate source.

*Cheating:* Anyone caught cheating on an exam in this course will receive a failing grade on the relevant exam problem(s), and will also be reported to the University Center for Student Conduct. In order to guarantee that you are not suspected of cheating, please keep your eyes on your own materials and do not converse with others during the exams. If you must look in a direction other than your exam paper, we recommend looking up at the ceiling.

*Plagiarism:* To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. This includes copying homework solutions from printed or on-line, published or unpublished sources.

Your experience as a student at UC Berkeley is hopefully fueled by passion for learning and replete with fulfilling activities. We also understand that being a student may be stressful. There may be times when there is temptation to engage in some kind of cheating in order to improve a grade or otherwise advance your career. This could be as blatant as having someone else sit for you in an exam, or submitting a written assignment that has been copied from another source. And it could be as subtle as glancing at a fellow student's exam when you are unsure of an answer to a question and are looking for some confirmation.

**Note: All above provisions listed in the course info sheet are subject to change at the instructor's discretion. Changes may happen to address problems and to improve the smooth running of the class and/or discussion sections.**

**Time-line for the course**

<b>Chapter</b>	<b>Begins on</b>
1	June 20
2	June 21
3	June 23
4	June 28
5	June 30
6	July 5
7	July 7
8	July 11
9	July 12
10	July 18
11	July 20
12	July 25
13	July 28
14	August 2
15	August 3
16	August 8