

## Course Information

### Physics 7A Lecture 1 - Spring 2019

**Lecture 1 Information**                  Lectures: M/W/F, 11am-12pm, 1 LeConte                  starting 1/23

Catherine Bordel                          Office hours: Tu/Th, 10-11 am in 395 LeConte                  starting 1/29  
cbordel@berkeley.edu                          W, 12:30-1:30 pm in 395 LeConte

**First 2 weeks:** You must attend your discussion and laboratory sections during the first two weeks of class, including Tuesday 1/22, or you may be **dropped from the course**; if you must miss section due to an unavoidable conflict, email your GSI and the Head GSI to avoid being dropped. If you need to add a discussion or lab section, check CalCentral. We cannot allow more than 24 students per discussion/lab section. You must add your registration through CalCentral; contact the Head GSI (contact info below) if you have an unresolved scheduling conflict with an existing registration before you cancel it. Since this is an **Early Drop Deadline (EDD)** course, you cannot change your registration after midnight on **Friday Feb. 1, 2019**. You are responsible to avoid scheduling conflicts with the midterms and final exam (times listed below) and with your discussion and laboratory sections.

**Course WWW URL:** Once you're registered in the class, you should have access to the course web site on bCourses (<https://bcourses.berkeley.edu>), where we will post course information. Make sure your email address is correct, as we will sometimes distribute information this way.

**Head Graduate Student Instructor:** Ezra Lesser <[elesser@berkeley.edu](mailto:elesser@berkeley.edu)>

**7A Course Center for GSI office hours:** 105 LeConte (You may attend **any** GSI's office hours)

**Student Services:**        **Kathy Lee**        368 LeConte Hall <[kathyl@berkeley.edu](mailto:kathyl@berkeley.edu)>  
                                      **Amanda Dillon** 374 LeConte Hall <[amidillon@berkeley.edu](mailto:amidillon@berkeley.edu)>

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.

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

#### **Required material:**

- D. C. Giancoli, *Physics for Scientists and Engineers*, Volume 1 (custom edition for the University of California, 2 Berkeley), 4th edition (an older edition is fine too). 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. This is a **required** item.
- *MasteringPhysics*. This is the online homework facility. The workbook and textbook, along with Mastering Physics, can be bought as one unit. They are available at Ned's and the ASUC bookstore bundled in a package with the access code for the online homework (see below). This is much cheaper than buying them separately (for the newest edition), but you can also get an older textbook edition and buy the HW access code separately. This is a **required** item.
- Elby, *Portable TA: Problem Solving Guide*, Volume 1. This extremely popular resource contains practice problems about classical mechanics with completely worked out solutions. It is meant to be *worked*, not read. These practice problems are for your own benefit; we will not collect your work on them. We suggest working through at least some of the problems in Elby before attempting each week's homework assignment. This is a **suggested** text.

**Teaching/learning philosophy:**

As the instructor, my point is not only to teach you some physics, but also to teach you how to develop some skills like thinking critically, acquiring a logical thought process and focusing on the concepts more than applying some recipes.

For you students, it is crucial to realize that your academic performance is actually enhanced if you cultivate the following mindset: **curiosity, desire to learn, tenacity and interactions with your peers.**

**Readings:** Reading the textbook and working problems is very important. Be prepared for lecture and section by reading the assigned material in advance. Lectures and sections both assume that some of the basic material has been learned from the text already.

**Lectures:** Lectures are meant to present the course material, but it doesn't mean that you should be passively taking notes without thinking. **In order to make sure that you process the information during class time and remain intellectually stimulated, I will ask questions on a regular basis, and I encourage you to ask questions during lectures!** Because of the amount of material that needs to be covered, the number of examples covered in lecture will be limited, so discussion/lab meetings and homework are essential to your understanding of the material.

**Discussion/Laboratory (D/L) Sections:** You must be registered in DIS and LAB sections with the same number (e.g. DIS 105 & LAB 105). They meet twice a week for two hours. You *must* attend all of your registered sections during the first two weeks or you may be dropped from the course; if you must miss one, contact your GSI (and the Head GSI to be safe) so you don't get dropped. Some LAB meetings will be laboratory sessions and some will be discussions with **graded quizzes** in some cases. **Three quizzes** will be given throughout the semester, and you will get a notification from your GSI a few days ahead of time. Attendance at *all* D/L sections is part of the course, and you are responsible for the material presented there. **Attending D/L sections plays a huge part in your understanding of the material**, as sections provide an opportunity to work in smaller groups, ask more/deeper questions, discuss areas you are uncertain of, improve your problem-solving and writing skills.

**Make-up labs:** If you miss a lab session, you must make it up within a week. E.g., if you miss your lab on Wednesday, you must make it up before your class the following Wednesday. Do the lab (unobtrusively!) during some other section, as described in the lab policy. There will be **no make-ups at the end of the semester**. **You must complete at least 6 of the 7 labs to pass the course, and if you miss one lab with no valid excuse, your overall course grade will drop by one full letter grade (e.g. B<sup>+</sup>→C<sup>+</sup>).**

**Homework:** **Working on homework problems is key to your in-depth understanding of the course material** — you learn physics by **doing it** more than you can from just reading the text or watching others solve problems. You will have a weekly problem set of varying difficulty due **Friday at 11:00 PM**. The first assignment is due Friday of the first week of classes, though it will not be for credit. **Late homework will not be accepted. We will, however, drop your lowest homework score.** Homework is assigned and submitted online using Mastering Physics. This has the advantage that you get rapid feedback on whether you understand the material, and the system has some ability to prompt you past difficulties. Remember: the benefit comes from *working* the problems, not just from handing in the answers. However, since the online software is based on numerical problems while my focus is mostly conceptual, **I encourage you to write down neat and detailed symbolic solutions in a notebook, in a logical and organized manner, as expected on an exam.**

To submit your online homework you will need a personal Mastering Physics access code, which you can get bundled with the textbook and workbook.

You will also need the Mastering Physics Course ID, which is: **MPBORDEL39764**

You should attempt each homework problem for yourself, but we encourage you to work with peers when you get stuck. Try to get just enough help to overcome the current sticking point and then go back to trying to solve it on your own as much as possible. When submitting work as your own, you are stating that the solutions you are presenting are *your own*, and are not just answers 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 to new problems!

**Academic honesty:** We encourage you to work with your fellow students when appropriate. Any form of cheating will be treated very severely, most likely by your failing the course and by referral to Student Judicial Affairs: <http://students.berkeley.edu/uga/conduct.asp>.

**Exams:** There will be two, two-hour midterm examinations plus a three-hour final exam, scheduled as follows:

**Monday, Feb. 25, 7:00 - 9:00 p.m.**  
**Monday, Apr. 1, 7:00 - 9:00 p.m.**  
**Tuesday, May 14, 7-10 pm (group 8)**

These exams' location, as well as midterm and final exam review session details will be announced via bCourses. A Cal ID with your picture is required at all exams. You may use pencil or pen, but **no** textbooks, calculators, cell phones or other electronics will be allowed. The exams will be scanned and graded via Gradescope so you will be provided with an access code to check your grades and see your graded exams.

**Grades:** Your attendance and active participation in all parts of the course is expected. You are responsible for all information presented in lectures, D/L sections, and on homework assignments. Grades will be determined from a weighting of all the elements as follows:

<b>First midterm exam</b>	<b>15%</b>
<b>Second midterm exam</b>	<b>25%</b>
<b>Final exam</b>	<b>40%</b>
<b>Homework</b>	<b>10%</b>
<b>Quizzes</b>	<b>5%</b>
<b>Laboratory write-ups</b>	<b>5%</b>

Your numerical score will be used to assign a course letter grade for the class, following the "strongly recommended" guidelines established by the Physics Department.

In accordance with University policy, an "**Incomplete**" for the course can only be given under circumstances beyond a student's control, and only when work already completed is of *at least C quality*.

**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!

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 so we strongly encourage you to take advantage of them.
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