

Course Information

Instructor: Professor Ahmet Yildiz

- Email: yildiz@berkeley.edu
- Office Hours: Tuesday 5-6 and Friday 12-1, 474 Stanley Hall
- As the instructor for this course, I will teach the physical concepts, course material and solving problems during my office hours, after the lectures, or through emails.

Head GSI: Robert Kealhofer

- Email: robert+GSI@berkeley.edu
- Office Hours: by appointment.
- All administrative issues (e.g. switching sections, dropping the class, adding the class, missing labs, missing exams due to serious health issues, Mastering Physics conflicts...) have to be addressed directly to the head GSI.
- When emailing Robert, **please include your section number (e.g. 102)**.
- I WILL NOT be able to help you resolve these issues. If you happen to e-mail me such requests by mistake, I MAY forward them to the head GSI.

Course Center: 105 Le Conte

- Please find out your GSI assignment and office hours.
- All GSI office hours are held in the course center.
- You can go to the whichever GSI office hours that work with you schedule.
- 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.

Required Course Materials:

- Textbook: Giancoli, *Physics for Scientists & Engineers*, Volume 1 (Custom Edition for UC Berkeley)
- workbook/lab manual: Birkett & Elby, *7A Workbook*
- online homework: Mastering Physics subscription

Suggested Course Material:

- Kleppner and Kolenkow, *An Introduction to Mechanics*, 2nd edition

Prerequisites:

- Math 1A (Calculus) is a prerequisite
- Math 1B may be taken concurrently

- Math proficiency in the following areas is essential: algebra, trigonometry, single-variable differentiation, derivation, integration, and **vector algebra** (both dot product and cross product). If you are uncertain about your preparation, consult the head GSI.

Course Webpage: bcourses.berkeley.edu

- Course material (syllabus, announcements, lecture slides, old exams...) will be uploaded to the course website in <https://bcourses.berkeley.edu/courses/1489285>.

Enrollment:

- Early Drop Deadline: End of 2nd week (Jan. 31, 2020) at midnight.
- All enrollment is through CalCentral.
- Contact the head GSI for issues related to switching your sections. All section changes must go through CalCentral. You may want to pair up with another student to swap sections.
- You must attend ALL discussion/laboratory (DL) sections for which you are registered in THE FIRST TWO WEEKS to remain enrolled in the class.

Lectures:

- Time/Location: MWF 11-12, 1 LeConte Hall
- We post the video of each lecture online. Yet, the video only has sound and the powerpoint, whereas most of the teaching will be done on the board. So, come to lectures.
- There are lectures, lecture demos, after class discussions, office hours, GSI discussion/problem solving sections (Workbook problems), labs, homeworks (Mastering Physics, online).
- Physics 7A will cover Newtonian Mechanics, including topics such as Linear Motion, Rotational Motion, Gravitation, Fluids, and Waves.
- We have 16 chapters to cover in 14 weeks (including holidays). This is a lot of material and **we have to move fast**. It is very easy to fall behind. Please try to keep up with the material and let us know if we move way too fast! We will cover first chapters quickly and slow down to the usual pace of the course in Newtonian Mechanics.
- We will cover the material at a high level.
- **We assume that you have seen this material at a simpler level in high school.**
- So, if you are somewhat familiar with the material, you may enjoy this course. What if this is not the case?

“It is very frustrating that this course operates under the assumption that students have taken a physics class prior to taking this one. Many of us did not have access to a physics class in our high school, so it makes it that much more difficult to keep up with the content that is difficult even for students who have taken physics classes before. This assumption alienates students from under-resourced communities and puts them at a disadvantage from the start.”

Anonymous student who took this course from me last semester

If you have not taken Physics before, you may find it very difficult to catch up with the pace of the course. I strongly recommend:

- Before each lecture, read the relevant Chapter in the book and go through the lecture slides
- Attend the lectures
- Ask questions after lectures
- After lectures, try to solve the examples solved in lectures yourself
- Office Hours
- Attend Discussion Sections and GSI office hours
- Spend extra time on problem solving
- Group study
- 10-15 hours of work per week

- If you fall behind, the course is not going to wait for you.
- If you do not attend the lectures and try to go over the lecture material few days before the exam, don't be surprised to get abysmal exam scores.

Discussion/Lab Sections:

- Discussion and lab (D/L) sections begin on the first day of instruction. You must attend your D/L sections during the first and second week, or you may be dropped.
- DL sections meet twice a week for two hours EVERY week, even when there is no lab scheduled.
- In your DL sections you will practice problems and discuss concepts in small groups, with the guidance of a GSI, as well as perform labs.
- You must bring your workbook to your DL section.
- Participation in DL sections may positively affect your grade.

Labs:

- There will be 7 labs throughout the semester (see the syllabus) performed in your DL section. While you perform the labs, you will complete the lab worksheet found in the workbook. You will turn in the lab worksheet at the end of your lab section.
- If you miss a lab for a valid reason (e.g. illness) you must email your GSI to let them know the reason for your absence **before** your lab takes place. To make up a missed lab, you should attend another DL section during that same week, also emailing that GSI ahead of time to let them know you will be attending their section. If you are not able to make up a lab in the week that it runs, one lab setup will also be available in each lab room the following week for makeups. You may only make up a lab in the following week once per semester. After that following week, you will not be able to make up the lab at all. There are no makeups offered for students who notify their GSI of their absence after the lab takes place.
- You are required to complete ALL labs: any uncompleted labs will result in a reduction of your grade by 1/3 of a letter grade for each lab missed. If you miss more than two labs, you will fail this course.

Homework:

- There will be weekly homework due Fridays at 10 pm.

- Homework will be computer-based homework on the Mastering Physics website.
- You must purchase a registration card either along with your textbook, or on the Mastering Physics website (www.masteringphysics.com) directly.
- You will need to sign up for Mastering Physics with your Cal SID# and use the Course ID: **MP7ASP20L1**. If your Cal SID # is incorrect you may not receive homework credit.
- No late homework will be accepted. We will drop your lowest **two** homework scores.
- We encourage you to work with and help other students, however the homework you submit must ultimately be your own work. This means that while other students may teach you how to do a problem, you must eventually be able to solve the problem on your own and submit your own solution, not one copied from another student.
- Homework problems are typically easier than the midterm and final problems. This is because homework is designed to have you practice the material every week, whereas the exams expect that you mastered the material after lots of practice.

Exams:

- There will be two evening midterms and a final exam (please check dates in the syllabus).
- Topic coverage of each exam will be announced a week before the exam in lectures and in the course website.
- **The final exam is not cumulative** and will focus on the last chapters, but you may be required to know the fundamentals of mechanics in order to solve those questions.
- You **MUST** be available to take all exams. Unresolvable conflicts with the exam dates must be discussed with the head GSI immediately.
- There are no makeup exams for students who miss exams without a documented conflict or hardship.
- All exams are closed book—you will be allowed one letter sized paper (one side only) handwritten notes for each exam.
- No need to bring your own blue book (or green book) to the exams.
- Exams will include conceptual questions and workbook questions, as well as quantitative problems. **The level of exam questions is higher** than practice problems at the beginning of the chapters in Giancoli and most of the homework problems. They are at the level of end of chapter problems with (*) or the ones in “General Problems”. Problems in Kleppner and Kolenkow are better representative of the exam level.
- Questions and answers of **the old exams** are uploaded to the bcourses website. They are the most representative of the exam level.
- **Please write legibly.** Exam problems will be graded based on your solutions. Partial credit will be given even if you do not have the correct answer. No credit will be given for correct answers without a clear reasoning and showing your work.

Grading:

- The grade breakdown is the following:

Midterm 1	22.5%
Midterm 2	22.5%
Final Exam	35%
Homework	10%
Discussion & Labs	10%

- We will follow the department guidelines for grade distribution: roughly 25% A's, 40% B's and 35% C's. D's and F's will be given on a case-by-case basis to students displaying especially poor performance.

Accommodations:

- Students who require special accommodations for the class (e.g. for exams, lecture, labs) must contact the instructor at the beginning of the semester.