

Physics 7B Syllabus, Spring 2015

Syllabus complementary info → see: Course Info Sheet

Lecture 002, E. Corsini

(Last updated : 02-22-2015 – previous update 01/20/15 – changes are highlighted)

CCN : 68679

bCourses : PHYSICS 7B - LEC 002 – ECORSINI

Mastering Physics : CORSINISPRING2015PH7B

(dates and topics covered are approximate ; for the smooth running of the course, dates and topics may be changed at the instructor's sole discretion)

Check bCourses, Piazza, & Mastering Physics for other updates and further information.

<u>Week</u>	<u>Lectures – week of</u>	<u>Topics</u>	<u>Reading</u>	<u>Labs</u>
1	Jan 19 th	Thermal expansion, ideal gas law, kinetic theory	Ch 17, Ch18.1-2	---
2	Jan 26 th	Phase changes, heat, internal energy, specific heat, calorimetry, latent heat, work, first law, equipartition	Ch18.3-4, Ch19.1-9	---
3	Feb 2 nd	Heat conduction, heat engines, entropy, second law	Ch 19.10, Ch 20.1-6	---
4	Feb 9 th	Electric charge, force, field	Ch 21.1-10	Heat engine
5	Feb 16 th	Electric dipole, flux, Gauss's law	Ch 21.11, Ch 22.1-2	---
6 ^I	Feb 23 rd	Applications of Gauss's law, electric potential	Ch 22.3, Ch 23.2	<i>Midterm 1</i>
7	Mar 2 nd	Electric Potential	Ch 23.3-8	---
8	Mar 9 th	Capacitors	Ch 24.1-6	Equipot. lines & E. field
9	Mar 16 th	Current, resistors, DC circuits	Ch 25.1-6 & 8, Ch 26.1-5	---
	<i>Mar 23rd</i>	<i>Spring Break</i>	---	---
10	Mar 30 th	Magnetic force, magnetic dipole, Hall effect	Ch 26.7 , Ch 27.1-8	DC circuits
11 ^{II}	Apr 6 th	Ampère's law and applications	Ch 28.1-5	<i>Midterm 2</i>
12	Apr 13 th	Biot-Savart law and applications	Ch 28.6-7	e/M
13	Apr 20 th	Electromagnetic induction	Ch 29.1-5 & 7	---
14	Apr 27 th	Inductance, LR and LC circuits	30.1-9, 25.7, 29.6	O-scope & time dep.
15	<i>May 4th</i>	<i>Reading/Review/Recitation Week</i>	<i>No new material</i>	---
16	<i>May 11th</i>	<i>Final examination</i>	---	---

Midterm I: Tue, Feb. 24, 6-9 pm (2 hrs)

Midterm II: Tue, Apr. 7, 6-9 pm (2 hrs)

Final Exam: Monday, May 11, 11:30 am - 2:30 pm

(always double check exam dates and times from another source)

University of California, Berkeley, Department of Physics

Physics 7B, Course Information Sheet, Spring 2015

Note: All provisions listed in this document are subject to change at the professor-instructor's sole discretion. If changes have to be made, to address problems and to improve the smooth running of the class and/or discussion sections, students will be informed via class announcement and/or via bCourses.

(last revised 02/11/2015 – see revised highlighted paragraph)

Lecture 1 Instructor	Lecture Info	Instructor Office Hours
Dr. Eric Corsini	Lec 1: Tues/Thur, 2-3:30pm	TBA
Office: 388 Leconte	1 LeConte	388 Leconte
Email: ecorsini@berkeley.edu		

First two weeks: You must attend your discussion and laboratory (DL) sections during the first two weeks of class to remain enrolled in the class. This includes DL sections that meet before the first lecture. However, should you decide not to take the course, it is the student's final responsibility to drop the course on Tele-Bears by the early drop deadline (see below).

Enrollment: There is no waitlist. All changes: must be done via Tele-BEARS. You must attend the DL section in which you enrolled. For all enrolment problems, after you have exhausted all other avenues, please contact the Head GSI.

Drop Deadline: Friday, Jan. 30, 2015 (This is an early Drop Deadline course).

Head Graduate Student Instructor: Lenny Evans <levans@berkeley.edu>

➔ **Any and all administrative issues should be addressed directly to the Head GSI.**

7B Course Center: 107 LeConte (for GSI office hours and for working with other students). You may attend the office hours of any GSI. See office hour schedule on bCourses. Office hours will begin on the second week of classes.

Course Webpage: bCourses

Prerequisites: Physics 7A, Math 1A and 1B; Math 53 should be taken concurrently.

Texts:

- D. C. Giancoli, *Physics for Scientists and Engineers*, Volume 2 4th edition (custom edition for the University of California, Berkeley). You are expected to read the sections of the book relevant to a given lecture before class (see syllabus). This is a **required** text.
- *7B Workbook*, by Hedeman, will be used in section. This is a **required text**. (Note: the labs and problems cannot be posted on bCourses - the workbooks are copyrighted).
- Mastering Physics. A valid account and access code is required.

Note: the textbook by Giancoli, the 7B Workbook by Hedemen, and an access code for Mastering Physics are sold as one package at the student bookstore.

• Elby, *Portable TA: Problem Solving Guide, Volume 2*, which is available in the 7B Course Center, 109 Leconte. This very popular resource contains practice problems about electricity and magnetism with completely worked 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.

iClickers: We will use iClickers in lecture to facilitate interaction. Clickers are required and you will receive extra credit for participation and correctness.

- Extra Credit : will be decided later in the semester; for reference, in 7A, at the end of the last semester, about 10% of students had their letter grade increased by 1/3 of a letter grade on account of iClicker participation.
- It is your responsibility to bring a functioning (check batteries!) and registered iClicker to lecture every day.
- There are NO makeups for iClicker questions..
- You must register your clicker with your name and student ID through bCourses ((not with iclicker.com) to receive credit. If your iclicker is incorrectly registered you will not receive iClicker credit.
- Use of iclicker questions may also be integrated in the discussion section and counted as part of the discussion section participation. See below

Exams and grades: There will be two midterm examinations and a final exam. Dates and times are listed on the syllabus. Exams cannot be rescheduled and must be taken at the scheduled time. Grades will be determined from a weighting of all the elements of the course approximately as follows:

1 st midterm exam	20%
2 nd midterm exam	20%
Final exam	40%
Homework	12%
Laboratory	5%
Discussion / participation	3%

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 or lower should be roughly 35%. We will be following these approximate guidelines. The grade of D or F will be given to a small percentage of students displaying especially poor performance.

Exam and other course related dates: it is the student's responsibility to ascertain that the commitments associated with each of his/her other courses do not have conflicting times and dates with this course. In very rare circumstances provisions will be made to accommodate a date-conflict if the matter is brought to the head GSI's attention before 5pm on Friday January 30th. The head GSI will relay the information to the professor. The pedagogical needs of the class are the key criteria when deciding whether a proposed accommodation is appropriate; the

decision will be made at the professor's sole discretion. If the date-conflict is brought to the head GSI's attention after Jan 30th no accommodation will be considered.

It is the student's responsibility to inform him/herself about material missed because of an absence, whether or not he/she has been formally excused.

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 online at the Mastering Physics site with a major credit card when you log on. Duplicate subscriptions will be deleted. Your subscription SID must match your actual UC Berkeley SID to receive homework credit for the course. You may log on to Mastering Physics 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
- Mastering Physics Course ID: see syllabus
- 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 the Head GSI immediately, include the phrase "Mastering Physics" in the subject.

Homework: Working on homework problems is central to your learning the course material. You will have a weekly problem set of approximately 10 problems of varying difficulty. Assignments will appear on your Mastering Physics account approximately 7 days before they are due. Generally, homework will be due by **11:59pm on Fridays**, with possible exceptions when there is a midterm that week. The first assignment "Introduction to MasteringPhysics" is not graded, and shows you how to use the Mastering Physics homework system. The second assignment is your first real homework set of the semester and will be due on Friday Jan. 30 at 11:59pm.

Masteringphysics purports to be an online physics homework system, and thus by extension it would seem that students should do their homework online, in front of the computer. You are strongly 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 white 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.

It is also strongly encouraged that you maintain a physics journal: a dedicated notebook or binder collecting the written homework solutions.

Late homework will not be accepted but the lowest HW score will be dropped. 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 online, 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 (see below).

Discussion/Laboratory Sections: DL sections meet twice a week, for two hours, EVERY week. Your Lab Section and your Discussion Section meet in different rooms, so check your schedule carefully. ALWAYS bring your 7A Workbook to your DL sections.

Learning physics means *doing* physics—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.

Discussion Sections: 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. The goal is for *you* to learn how to do physics, and 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. Your discussion section score is 3% of your total score; it will be based on your performance and participation in solving worksheet problems and other problems during discussion sections.

At the GSI's discretion, use of iClicker questions may be part of and integrated in the discussion section and part of the discussion section participation. The format of discussion and lab sections is at the GSI's discretion. Consult and confirm with your lab/discussion section GSI.

Lab Sections: In some weeks, as shown on the Course Syllabus, you will complete laboratory exercises that are also designed to help you explore some course concepts. **Lab sections meet every week** regardless of whether there is a lab for that week. Your work for the labs will be completed on handouts that can be found in your Physics 7B Workbook. You will normally hand in your work before you leave the lab. Because our labs are closely integrated with the rest of the course, they must be completed when scheduled.

To make the grading of labs uniform among all three 7B lecture sections the Labs will be graded out of a total of 10 points for each lab; 4 points for the prelab questions and 6 points for the lab. The grading rubric will be at the GSI's discretion. Consult and confirm with your lab/discussion section GSI.

Uncompleted labs will count as a "zero" in computing your course grade, AND your final course grade will be further reduced by 1/3 letter (B+ to B, etc.) for each missing lab

If for a valid reason (e.g.: illness) you must miss your DL section's lab time,

Immediately alert your GSI. It is your responsibility to obtain your GSI's approval and schedule and complete the lab with another DL lab section during that same week; you must also secure the approval of the other DL's GSI.

Go to bCourses >> Resources and find a lab section that fits in your schedule. The name and email address of the GSI teaching that section will be listed.

1. 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.
2. 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.
3. Your GSI will return the graded lab to you, and your grade will appear in the bcourses gradebook like a normal lab.

Only one time in the semester AND with your GSI's approval you may reschedule a lab for the following week. For that purpose we will leave one set-up in the room for one additional week..

Special accommodations: As per DSP rules, if you need disability-related accommodations in this class you should personally meet with the professor as soon as the Letter of Accommodation has been approved and provide a hard copy of the Letter to the professor. Instructions will be given to you on how to proceed. Generally the instructions will be to contact and follow the head GSI's directives in matters of exam meeting times and locations. This is one of your most important responsibilities.

If you have emergency medical information you wish to share with the professor, or if you need special arrangements in case the building must be evacuated, please inform your professor immediately.

To meet with your professor please see him/her after class or arrange a meeting at his/her office.

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.”**

It is expected 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: A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider 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. Never reach inside your backpack during an exam.

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 online, published or unpublished sources.

Academic Integrity and Ethics: Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the

academic world, for it undermines what we are dedicated to doing – furthering knowledge for the benefit of humanity.

In conclusion: your experience as a student at UC Berkeley is hopefully fueled by passion for learning and replete with fulfilling activities. And we also appreciate 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. One might do any of these things and potentially not get caught. However, if you cheat, no matter how much you may have learned in this class, you have failed to learn perhaps the most important lesson of all.

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.**

Please contact your lecturer or the Head GSI with any suggestions, complaints, or compliments.