University of California, Berkeley, Department of Physics

Physics 7B, Course Information Sheet, Spring 2015

Lecture 1 Instructor	Lecture Info	Instructor Office Hours
Dr. Catherine Bordel	Lec 1: MWF, 8-9 am	T,Th: 1-2pm ; W: ll am-12pm
Office: 311 Birge	1 LeConte	397 LeConte
Email: cbordel@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 enrollment problems, after you have exhausted all avenues, 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 (GSI office hours and work with other students).

Course Webpage: bCourse

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

Texts:

D. C. Giancoli, *Physics for Scientists and Engineers,* Volume 2 (custom edition for the University of California , Berkeley), 4th edition. You are expected to read the sections of the book relevant to a given lecture before class. This is a **required** text.

7B Workbook, by Hedeman, which will be packaged with Giancoli at the student bookstore. These will be used in section and are **required**. (The labs and problems cannot be posted on bspace since the workbooks are copyrighted).

Mastering Physics. The workbook and Giancoli, along with Mastering Physics, are being sold as one unit.

Students who wish to try extra problems can peruse at a copy of Elby, *Portable TA: Problem Solving Guide, Volume 2,* which is available in the 7B Course Center, 109 Le Conte. This popular resource contains practice problems about electricity and magnetism with completely worked solutions.

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Exams and grades: There will be two midterm examinations and a final exam. Dates and times are listed on syllabus. Exams cannot be rescheduled and must be taken at the scheduled time. Anyone with an unresolvable conflict with exam dates (like another prescheduled exam in a different class) needs to contact the Head GSI immediately. Grades will be determined from a weighting of all the elements of the course approximately as follows:

1st midterm exam	20%
2nd 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 provision 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 pedagogical needs of the class are the key criteria when deciding whether a proposed accommodation is appropriate; the decision will be made at the instructor'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 get informed 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 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: MPBORDEL83231
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 Mastering Physics" 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.
We strongly recommend that you solve each homework problem on paper in a physics-dedicated notebook or binder before entering your solutions in Mastering Physics. 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 but the lowest HW score will be dropped.
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 website , 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 7B 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. 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, you will be graded on your performance and participation in solving worksheet problems and other problems.

Labs: 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 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. **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.** 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. **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.**

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.

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 your professor immediately. To meet with your professor, please stay after class or arrange a meeting via email.

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.

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.

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. 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.**

Note: **All above provisions listed in the course info sheet are subject to change at the 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.**

Please contact your lecturer or the Head GSI with any concerns, questions or suggestions.

Physics 7B Syllabus, Spring 2015

Lecture 3, C. Bordel

Week	Lectures	Topics	Reading	Labs
1	01/ ~~19~~, 21, 23	Thermal expansion, ideal gas law, kinetic theory	17.4, 17.7-9,18.1-2	---
2	01/ 26, 28, 30	Phase changes, heat, internal energy, specific heat, calorimetry, latent heat, work, first law, equipartition	18.3-4(evaporation only), 19.1-9	---
3	02/2, 4, 6	Heat conduction, heat engines, entropy, second law	19.10(conduction only), 20.1-3, 20.5-6	---
4	02/9, 11, 13	Electric charge, force, field	21.1-10	Heat engine
5	02/~~16~~, 18, 20	Electric dipole, flux, Gauss's law	21.11, 22.1-2	---
6[I]	02/23, 25, 27	Applications of Gauss's law, electric potential	22.3, 23.2	*Midterm 1*
7	03/2, 4, 6	Electric Potential	23.3-8	---
8	03/9, 11, 13	Capacitors	24.1-6	Equipot. lines & E. field
9	03/16, 18, 20	Current, resistors, DC circuits	25.1-5, 25.8, 26.1-5	---
	03/ 23-27	*Spring Break*	---	---
10	03/30, 04/1, 3	Magnetic force, magnetic dipole, Hall effect	27.1-8	DC circuits
11[II]	04/6, 8, 10	Ampère's law and applications	28.1-5	*Midterm 2*
12	04/13,15, 17	Biot-Savart law and applications	28.6-7	e/M
13	04/20, 22, 24	Electromagnetic induction	29.1-4	---
14	04/27, 29, 05/ 1	Inductance, LR and LC circuits	30.1-5, 25.7, 29.6	O-scope & time dep.
15	*May 4-8*	*Reading/Review/Recitation Week*	*No new material*	---
16	*May 12*	*Final examination*	---	---

[I]Midterm I: Monday, Feb. 23, 7-9 pm

[II]Midterm II: Monday, Apr. 6, 7-9 pm

Final Exam: Tuesday, May 12, 8-11 am

Please check on bCourse for any updates or further information.