

Physics 7B - Lec.1 - Course Information - Spring 2020

Catherine Bordel Lectures: MWF, 1-2 pm, 1 LeConte starting 1/22

cbordel@berkeley.edu Office hours: TuTh, 1:30-2:30 pm, 395 LeConte starting 1/28

First two weeks: You must attend ALL your discussion/laboratory (D/L) sections during the first two weeks of class to remain enrolled, including the DS scheduled before the first lecture. If, on the contrary, you want to drop the class, it is YOUR responsibility to do it before the drop deadline, otherwise you will have to complete the course. **The Drop Deadline is Friday 01/31**. Please contact Kathy Lee <kathyl@berkeley.edu> or Kathleen Cooney <kathleen.cooney@berkeley.edu> from Student Services for more detailed information regarding enrollment.

Course WWW URL: Once you are registered in the class, you should have access to the course website on bCourses (<https://bcourses.berkeley.edu/>). The site contains course information and I will be posting practice exams there along with other useful information when the time comes. Make sure your email address is correct, as we will sometimes be distributing information through bCourses mailings.

Head Graduate Student Instructor: Newton Cheng [newtoncheng@berkeley.edu]

7B Course Center: 107 LeConte Hall

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.

Required Material:

- D.C. Giancoli, *Physics for Scientists and Engineers*, Volume 2, 4th edition (textbook).
- *7B Workbook*, by Hedeman (problems + lab manual).
- *MasteringPhysics* access (online HW associated with the above text)

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.

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**.

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 recommend that you read the material beforehand 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 103 & LAB 103). Some D/L meetings will be discussions and some will be laboratory sessions, but the sections always meet twice a week for two hours. The lab schedule is shown on the syllabus. If you wish to change discussion sections, you have to make an official change through CalCentral. If you cannot find any available spot, you can seek someone in the class with whom to switch (see "section policy" document). **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. **You are responsible for the material presented in D/L sections. You must attend ALL your registered discussion sections during the first 2 weeks -or you may be dropped from the course- and the labs are mandatory.**

You will receive a zero for any missed lab and no lab score will be dropped. Because the Physics Department and Engineering Schools take seriously the classification of this class as laboratory-based, **you will not pass if you have more than 1 unexcused lab.** **Note that whenever there is no scheduled lab, both meetings are discussions.**

Make-up labs: If you miss a lab, you must make it up in another lab section that week, and turn it in to your GSI at the next meeting (see "section policy" document). **There will be no make-ups at the end of the semester.**

Homework: **Working on homework problems is key to your in-depth understanding of the course material.** **Homework is mandatory** and consists in a weekly problem set assigned via the online homework program Mastering Physics (class ID is **MPBORDEL2619997**). **Each HW assignment will be due on Friday at 11:59pm, and the lowest HW score will be dropped.** Note that the very first assignment, due on 01/24, is for practice only. **For each HW problem, be it for credit or for practice only, I encourage you to write down neat and detailed solutions in a notebook, in a logical and organized manner, as expected on an exam.**

Exams: There will be 2 midterm examinations and a final examination on

Monday, Feb. 24, in 1, 3 & 4 LeConte, 7-9 PM (2 hr exam)

Monday, Apr. 6, in 1, 3 & 4 LeConte, 7-9 pm (2 hr exam)

Tuesday, May 12, room TBA, 8-11 am (3 hr exam)

A Cal ID with your picture is required at all exams, and more details regarding the topics covered will be posted before each exam.

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 entire course and by referral to Student Judicial Affairs: <http://students.berkeley.edu/uga/conduct.asp>.

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 HW assignments.** Grades will be determined from a weighting of all the elements as follows:

MT1: 24% ; MT2: 24% ; FINAL: 34% ; LABS: 8% ; HW: 10%

and you will have the opportunity to earn **5% extra credit for participation in discussion.**

Your numerical score will be used to assign a course letter grade for the class, with two exceptions discussed below. The mapping of ranges of numerical scores to letter grades (A,B,C,D,F) will reflect our judgment as to what percentages correspond to various degrees of demonstrated performance and learning, based on our overall assessment of all assignments, their difficulty, and their weights.

When taking a class pass/no-pass (P/NP), a *P* grade corresponds to the equivalent of a *C-* grade or above. Out of the desire to maintain the high standards for education at the University of California, and fairness and meaningfulness of grades, the University and Physics Department have established "strongly recommended" guidelines for the distribution of A's, B's, and C's in any one course. For lower-division, non-honors courses like Physics 7B, the recommendations are as follows: 25% A+/A/A-, 40% B+/B/B-, and 35% C+ or below. Note that the letter grade will only be assigned at the very end of the semester, after calculating the weighted average.

A course grade of "Incomplete" will only be considered under circumstances beyond a student's control, and only when these circumstances have prevented the student from completing certain assignments, not just because performance suffered, and then, according to official university policy, only when work already completed is of at least "C" quality or better.

We are committed to ensuring a respectful and responsive learning environment.

In the event of personal issues affecting your academic performance, or if you fall behind, please talk to me as soon as possible.

If you happen to need non-academic support throughout the semester, please check the following websites:

<https://care.berkeley.edu>

<https://uhs.berkeley.edu/caps>

Physics 7B Syllabus, Spring 2020

Lecture 1, MWF 1-2pm (C. Bordel)

<u>Week</u>	<u>Lectures</u>	<u>Topics</u>	<u>Reading</u>	<u>Labs</u>
1	Jan. 20, 22, 24	Thermal expansion, ideal gas law, kinetic theory	17.4, 17.7-9, 18.1-2	<i>No Lab</i>
2	Jan. 27, 29, 31	Phase changes, heat, internal energy, specific heat, calorimetry, latent heat, work, first law, equipartition	18.3-4(evaporation only), 19.1-9	<i>No Lab</i>
3	Feb. 3, 5, 7	Heat conduction, Heat Engines, Entropy, Second law	19.10(conduction only), 20.1-3, 20.5-6	<i>No Lab</i>
4	Feb. 10, 12, 14	Electric charge, Force, Field	21.1-10	Heat engine
5	Feb. 17, 19, 21	Electric dipole, Flux, Gauss's law	21.11, 22.1-2	<i>No Lab</i>
6 ^I	Feb. 24, 26, 28	Applications of Gauss's law	22.3	Midterm 1
7	Mar. 2, 4, 6	Electric Potential	23.2-8	<i>No Lab</i>
8	Mar. 9, 11, 13	Capacitors	24.1-6	Equipot. lines & E. field
9	Mar. 16, 18, 20	Current, Resistors, DC circuits	25.1-5, 25.8, 26.1-5	<i>No Lab</i>
---	<i>Mar. 23-27</i>	<i>Spring break</i>	---	---
10	Mar. 30, Apr. 1, 3	Magnetic force, Magnetic dipole, Hall effect	27.1-8	DC circuits
11 ^{II}	Apr. 6, 8, 10	Ampère's law and applications	28.1-5	Midterm 2
12	Apr. 13, 15, 17	Biot-Savart law and applications	28.6-7	<i>No Lab</i>
13	Apr. 20, 22, 24	Electromagnetic induction	29.1-4	e/M
14	Apr. 27, 29, May 1	Inductance, LR and LC circuits	30.1-5, 25.7, 29.6	O-scope & time dep.
---	<i>May 4-8</i>	<i>Reading/Review/Recitation Week</i>	<i>No new material</i>	---

^IMidterm I: Monday, February 24th from 7-9 PM (2 hrs), in 1, 3 & 4 LeConte

^{II}Midterm II: Monday, April 6th from 7-9 PM (2 hrs), in 1, 3 & 4 LeConte

Final Exam: Tuesday, May 12th from 8-11 AM (3 hrs), room TBA

Please check on bCourses for any updates or complements of information.