Physics 137A: Quantum Mechanics I, Fall 2020

Course information sheet and syllabus

Website: For official information such as grades: Berkeley bCourses (PHYS 137A LEC 002, access by your CalCentral dashboard.

For questions, we will have a Piazza site; see emailed invitation. Please make sure your official email (the one on bCourses) is checked regularly. On Piazza you can choose whether other students see your name or not; I can see it.

Lectures: TuTh 9:30-10:59 **(Zoom ID 971 2636 9236, passcode 109968)**
You must sign in through a Berkeley account. Meeting opens a few minutes before 9:40.
Discussion 201: Tu 8:30-9:29, (remote)
Discussion 202: W 8:00-8:59, (remote)

Professor: Joel Moore, jemoore@berkeley.edu
Professor office hour: tentatively Tuesday 2:00 pm, online; also Piazza
GSI: Elizabeth Dresselhaus, ej_dresselhaus@berkeley.edu
GSI office hours: TBA

Course text: *Introduction to Quantum Mechanics (3nd Edition)*, Griffiths
We will follow the textbook quite closely, and you are strongly encouraged to get a copy. If you use the 1st or 2nd edition instead, be aware that the numbering of problems changes with edition.

The subject of the class is non-relativistic quantum mechanics including applications such as atomic structure (Griffiths up to first parts of Chapter 5). Another useful book is *Quantum Mechanics* by Bransden and Joachain.

Prerequisites: Berkeley Physics 7A-7C and Mathematics 53-54, or Physics 89 in place of 54, or equivalent. Being able to compute predictions of quantum mechanics requires comfortable familiarity with linear algebra and multivariable calculus. There is unfortunately not much point to taking this course without that mathematical background.

We will not spend very much time (but a little more than Griffiths) on the experimental issues that led to the development of quantum mechanics; here looking at your Physics 7C notes or the first chapter of the textbook by Bransden may be a good idea if you wish to supplement the lectures.

Grading guideline: 35% problem sets, 30% midterms, 35% final.

You should read chapters of Griffiths concurrently with the course lectures, which will be recorded. Reading assignments will be listed on the problem sets. Problem sets are due by Friday 5 pm, electronic submission. Legible pictures of handwritten work are fine. You must obtain permission in advance to hand in a late homework; without permission, you will receive half credit if the homework is turned in by 5 pm the following Tuesday, and no credit after that.

Important dates: One midterm, online in class time, tentatively Tuesday October 20. Midterm II, online in class time, tentatively Tuesday November 17. Final exam: 12/15/20, 3 pm, online. I expect to offer *one* alternative final slot.

Responsibilities: professor designs problem sets, midterms, final. GSI grades problem sets and will grade midterms. GSI leads RRR week, and professor will grade final.