Prof. Capasso's Office Hours: Tuesdays 4 PM - 5 PM (in Pierce 205A)

Teaching Fellows:
Alfonso Palmieri - apalmieri@g.harvard.edu | Office Hours: TBD

Christian H Nunez - chnunez@g.harvard.edu | Office Hours: TBD

Textbooks: [PDFs available on Canvas: Files > Textbooks]
- D. Miller (Stanford University), Quantum Mechanics for Scientists and Engineers, Cambridge University Press, 10th edition (2016)

- Sakurai, Modern Quantum Mechanics

Course goals:

The objective of this course is to teach students the concepts and methods of quantum mechanics and to ensure that they acquire proficiency in the use of numerical methods for problem solving.

Course format:

Lectures twice a week complemented by weekly sections, where computational techniques based on Python programming will be introduced and applied to problem solving. Section participation is essential for learning

Classes are Wednesday and Friday 3 - 4.15. Sections on Thursday 4.30 - 5.45.

In the event of schedule conflicts of this section with other classes an additional section will be offered

Course Schedule

HW due dates and exams will be updated when determined.

	Classes	Sections/HW/Exams
Week 1 (starting Sept. 3rd)	W 4th F 6th	
Week 2 (starting Sept 9th)	W 11th F 13th	
Week 3 (starting Sept 16th)	W 18th F 20th	
Week 4 (starting Sept 23rd)	W 25th F 27th	
Week 5 (starting Sept 30th)	W 2nd F 4th	
Week 6 (starting Oct 7th)	W 9th F 11th	
Week 7 (starting Oct 14th)	W 16th F 18th	
Week 8 (starting Oct 21st)	W 23rd F 25th	
Week 9 (starting Oct 29th)	W 30th F 1st	
Week 10 (starting Nov 4th)	W 6th F 8th	
Week 11 (starting Nov 11th)	W 13th W 15th	
Week 12 (starting Nov 18th)	W 20th F 22nd	
Week 13 (starting Nov. 25th)	Thanksgiving Week (No lectures)	

Week 14 (starting Dec 2th)	W 4th (Last lecture)	
Week 15 (starting Dec 9th)	No lectures. Review section (date to be determined).	

Typical enrollees:

The course is designed for Graduate students in Quantum Science and Engineering, Electrical Engineering, Applied Physics and Chemistry. It is advised that students have a background in undergraduate quantum mechanics. Students without such a background are advised to take an undergraduate quantum mechanics course at the level of PHYS 143a or CHEM 160, prior to taking Foundations of Quantum Mechanics.

When is course typically offered?

Fall semesters

Teaching style

Classes are interactive interspersed with questions (by the instructor and the TFs)/ answers; students are encouraged to participate as an essential part of learning. Students are also expected to attend and participate in the sections (1h 15min) where material of relevance will be discussed and computational methods for problem solving will be taught.

Assignments and grading:

Grading Scheme: 40% Problem Sets, 25% Midterm Exam, 25% Final Exam, 10% Course Participation. There will be 5 problem sets due approximately every other week. Each problem set will have a programming component, where Python is recommended. There will be a take home midterm exam and final exam.

Sample reading list:

David Miller; Quantum Mechanics for Scientists and Engineers; J. J . Sakurai and J. Napolitano. Modern Quantum Mechanics

Syllabus:

Click here for the syllabus: (Syllabus.pdf)