

Syllabus

Physics 550, Introduction to Quantum Mechanics

Instructor: Prof. Leonid Rokhinson
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Lectures: Tue & Thu 1:30-2:45 pm in Rm PHYS 338

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Course description:

This is an introductory course, with the aim to prepare students for in-depth QM courses at a graduate level. The goals of this course are to teach the basic concepts of Quantum Mechanics and to make you adept in solving relevant problems. The course covers an introduction to the definition and interpretation of the wavefunction, the solution of the time-independent Schrödinger Equation for several systems, eigenvalue problems, abstract formulation of Quantum Mechanics, the hydrogen atom, spin, two-particle systems, the WKB approximation, perturbation theory, scattering theory and relativistic Quantum Mechanics.

Prerequisites: Physics 342 or 344, 310 or 410

Website All course materials will be posted on the Brightspace

Homework: Homework will be posted weekly starting from week 2.

Exams: Midterm exam 1 on Oct 5 (in-class)
Midterm exam 2 on Nov 7 (in-class)
Final exam TBA

Grading:	Homework	20%
	Midterms (2)	20%+20%
	Final	40%

Main texts:

Introduction to Quantum Mechanics, 3rd Ed. By David J. Griffiths and Darrell F. Schroeter

Other suggested Texts:

1. C. Cohen-Tannoudji, B. Diu, F. Laloe, *Quantum Mechanics*
2. P.A.M. Dirac, *Quantum Mechanics*
3. S. Gasiorowicz, *Quantum Physics*
4. R. Shankar, *Principles of Quantum Mechanics*
5. R.P. Feynman, *Lectures on Physics*, Vol. 3
6. E. Merzbacher, *Quantum Mechanics*
7. A. Messiah, *Quantum Mechanics*, Vol. 1 and 2