

Physics 511: Quantum Mechanics I (Fall 2023)

Lectures: Tue,Thu: 11:30-12:50

Place: P113, Physics Building.

First meeting: Tuesday, August 29, 2023

Instructor: Alexander Abanov, alexandre.abanov@stonybrook.edu

Office hour: TBD

Teaching assistant : TBD

Office hour: TBD

Textbook: J.J. Sakurai and Jim Napolitano, "Modern quantum mechanics"

Grading: Grade = (1/5) Homework + (2/5) Midterm + (2/5) Final

Exams: Exam policy: no textbooks or print-outs. Personal class notes and assignments with solutions are allowed.

Homework: assigned every week.

From Graduate School Bulletin, Stony Brook University. PHY 511: Quantum Mechanics I
First course in a two-part sequence. Topics include basic quantum physics and mathematical apparatus; application to one dimensional examples and simple systems. Symmetries, angular momentum, and spin. Additional topics as time permits.

Fall, 3 credits, Letter graded (A, A-, B+, etc.)

Approximate outline of the course:

1. Basic concepts: Hilbert space, quantum dynamics, measurements.
2. Quantum dynamics in one dimension.
3. Angular momentum, spin.
4. Hydrogen atom.
5. Symmetries in quantum mechanics.
6. Two-level systems. Elements of quantum information and computation.