Intermediate Quantum Mechanics  (01:750:417)

Summary: Intermediate Quantum Mechanics is the most advanced undergraduate Quantum Mechanics class at Rutgers and covers vector space formulation, operators, eigenfunctions, bound states, angular momentum, central potentials, and approximation methods. Topics are covered roughly in this order: wave function and probability, time-independent Schrodinger equation with examples; quantum formalism and the uncertainly principle; 3-D quantum mechanics, angular momentum, spin, and hydrogen atom; identical particles and quantum statistical mechanics; time-independent perturbation, variation and WKB approximation; and time-dependent perturbation theory.


Co-requisites: None

Level: This course is intended for students majoring in physics and astronomy. Although it is possible to complete the professional option without taking this course, it is highly recommended for students who plan to continue further studies in the disciplines after graduation.

Credits and Exams: This is a three-credit course, normally meeting for two 80-minute periods per week. This course typically has one or two mid-terms, and a final exam.

Recent text: "Introduction to Quantum Mechanics", David J. Griffiths (may change with instructor).

Notes: This is a fast-paced course and liberally uses 3-D vector calculus. It is best to take this course after finishing the Electromagnetism and Classical Mechanics sequences.

(Somalwar 10/2019)