COURSE DETAIL

FOUNDATIONS OF QUANTUM MECHANICS
Country United Kingdom - Scotland
Host Institution University of Edinburgh
Program(s) University of Edinburgh
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Physics
UCEAP Course Number 120
UCEAP Course Suffix
UCEAP Official Title FOUNDATIONS OF QUANTUM MECHANICS
UCEAP Transcript Title FOUND QUANTUM MECH
UCEAP Quarter Units 4.00
UCEAP Semester Units 2.70

Course Description
This course covers fundamentals of quantum mechanics and its applications to atomic and molecular systems. The course examines non-relativistic quantum mechanics, supplying the basic concepts and tools needed to understand the physics of atoms, molecules, and the solid state. One-dimensional wave mechanics are also reviewed. It introduces the postulates and calculational rules of quantum mechanics, including Dirac notation. Angular momentum and spin are shown to be quantized, and students discuss the corresponding wave-function symmetries. Students solve the eigenvalue equation for the energy for a number of important cases, including the harmonic oscillator and the Hydrogen atom. They also study approximate methods of solution, including time-independent perturbation theory, with application to atomic structure.

Language(s) of Instruction
English

Host Institution Course Number
PHYS09051

Host Institution Course Title
FOUNDATIONS OF QUANTUM MECHANICS

Host Institution Course Details
http://www.drps.ed.ac.uk/24-25/dpt/cxphys09051.htm

Host Institution Campus
Edinburgh

Host Institution Faculty

Host Institution Degree

Host Institution Department
Physics and Astronomy

Course Last Reviewed
2024-2025

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