Nebraska Wesleyan University

PHYS 4000 Quantum Mechanics

Catalog

2023-2024

Course Description

An introduction to fundamental concepts and topics in quantum mechanics. Topics include the SchrÃ¶dinger equation, wave functions, probability, the uncertainty principle, stationary states, one-dimensional potentials, Hilbert space and formal operator methods, the hydrogen atom, spin and angular momentum, and identical particles and entanglement. Analytical and computational solutions to the SchrÃ¶dinger equation will be developed. Quantum information science and its applications will also be explored. mechanics. Topics include the SchrÃ¶dinger equation, wave functions, probability, the uncertainty principle, stationary states, one-dimensional potentials, Hilbert space and formal operator methods, the hydrogen atom, spin and angular momentum, and identical particles and entanglement. Analytical and computational solutions to the SchrÃ¶dinger equation will be developed. Quantum information science and its applications will also be explored.

Prerequisite(s): PHYS 2400 Introduction to Modern Physics, CMPSC 1100 Python Programming I and MATH 2600 Calculus III or MATH 3100 Differential Equations.
(Normally offered even spring semesters.)

Course Hours

4 hours

Departments

1. Physics