COURSE DETAIL

SYMMETRIES 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 102
UCEAP Course Suffix
UCEAP Official Title SYMMETRIES OF QUANTUM MECHANICS
UCEAP Transcript Title SYMMETRS QUANT MECH
UCEAP Quarter Units 4.00
UCEAP Semester Units 2.70

Course Description
Building on the material presented in the Quantum Mechanics course, this course introduces the basic mathematical tools of quantum mechanics with a special emphasis on the connection between physical phenomena and mathematical modeling. The Hilbert space of physical states is reviewed as a particular case of a linear vector space. General properties of representation theory are discussed for the case of finite groups and are applied to quantum mechanical systems. Representations of the continuous groups U(1), SO(3), and SU(2) are presented and discussed in relation with invariance under translations and rotations. The general theory of angular momentum is introduced and applied to cases of physical interest. Quantum mechanical results are compared to their classical counterparts for a number of physical systems.

Language(s) of Instruction
English

Host Institution Course Number
PHYS10083

Host Institution Course Title
SYMMETRIES OF QUANTUM MECHANICS

Host Institution Campus
Edinburgh

Host Institution Faculty

Host Institution Degree

Host Institution Department
Physics and Astronomy

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