COURSE DETAIL

STATISTICAL MECHANICS AND THERMODYNAMICS
Country Hong Kong
Host Institution University of Hong Kong
Program(s) University of Hong Kong
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Physics
UCEAP Course Number 150
UCEAP Course Suffix
UCEAP Official Title STATISTICAL MECHANICS AND THERMODYNAMICS
UCEAP Transcript Title STATISTIC MECHANICS
UCEAP Quarter Units 5.00
UCEAP Semester Units 3.30

Course Description

This course discusses statistical mechanics and thermodynamics in the advanced undergraduate level with vigorous mathematical treatment. It serves as a core course for physics major students as well as an elective core for those who are interested to gain a deep understanding of statistical mechanics and thermodynamics and to apply related techniques in their own majors. This is also an essential course for those who plan to pursue postgraduate studies in physics or related disciplines. Both conceptual ideas and mathematical treatment are emphasized. Topics include: Elements of Ensemble Theory, Boltzmann, Fermi and Bose-Einstein statistics. Partition function and the laws of Thermodynamics. Disorder and entropy; concept of temperature; the free energy. Density of states. Classical gas, electrons in metals, and black body radiation. Heat capacities. Thermal properties of magnetic systems. Assessment: assignments, final exam, test, lab reports.

Language(s) of Instruction
English

Host Institution Course Number
PHYS3550

Host Institution Course Title
STATISTICAL MECHANICS & THERMODYNAMICS

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Physics

Course Last Reviewed
2022-2023

Print