COURSE DETAIL

METHODS OF MATHEMATICAL PHYSICS
Country United Kingdom - Scotland
Host Institution University of Edinburgh
Program(s) University of Edinburgh
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Physics Mathematics
UCEAP Course Number 163
UCEAP Course Suffix
UCEAP Official Title METHODS OF MATHEMATICAL PHYSICS
UCEAP Transcript Title MATHEMATICAL PHYS
UCEAP Quarter Units 4.00
UCEAP Semester Units 2.70

Course Description
This is a course on advanced methods of mathematical physics. The course demonstrates the utility and limitations of a variety of powerful calculation techniques, and provides a deeper understanding of the mathematics underpinning theoretical physics. The course reviews and develops understanding of the following topics: the theory of complex analysis, and applications to special functions; asymptotic expansions; ordinary and partial differential equations, in particular, characteristics, integral transform, and Green function techniques; Dirac delta and generalized functions; and the Sturm-Liouville theory. The course emphasizes the generality of approaches and offers illustrative examples from electrodynamics and quantum and statistical mechanics.

Language(s) of Instruction
English

Host Institution Course Number
PHYS10034

Host Institution Course Title
METHODS OF MATHEMATICAL PHYSICS

Host Institution Course Details
http://www.drps.ed.ac.uk/19-20/dpt/cxphys10034.htm

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Physics and Astonomy

Course Last Reviewed
2025-2026

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