

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 Astronomy

Course Last Reviewed

2025-2026

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