COURSE DETAIL

MATHEMATICS FOR PHYSICAL SCIENCES AND ENGINEERING

Country
United Kingdom - England

Host Institution
Exeter College, Oxford University

Program(s)
Summer in Oxford

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
115

UCEAP Course Suffix
S

UCEAP Official Title
MATHEMATICS FOR PHYSICAL SCIENCES AND ENGINEERING

UCEAP Transcript Title
MATH/PHYS SCI&ENG

UCEAP Quarter Units
6.00

UCEAP Semester Units

4.00

Course Description
This course explores some important areas of calculus used in many physical sciences and engineering courses. It builds upon the calculus of functions of single variables, to cover multi-variable calculus and functions of a complex variable. The former has applications in classical mechanics, thermodynamics, and electrostatics, for example, while the latter is used extensively in advanced quantum theory and signal processing. It is essential that students taking this course have already studied basic single variable calculus and basic linear algebra. The following topics will be assumed knowledge from the outset: differentiation (product, quotient, chain rules); integration (basic integration techniques, integration by parts and by substitution); and vectors in Cartesian coordinates, scalar (dot) and vector (cross) products.

Language(s) of Instruction
English

Host Institution Course Number

Host Institution Course Title
MATHEMATICS FOR PHYSICAL SCIENCES AND ENGINEERING

Host Institution Campus
Exeter College

Host Institution Faculty

Host Institution Degree

Host Institution Department

Print