COURSE DETAIL

CALCULUS AND APPLICATIONS A
Country United Kingdom - England
Host Institution University of Manchester
Program(s) University of Manchester
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mathematics
UCEAP Course Number 150
UCEAP Course Suffix
UCEAP Official Title CALCULUS AND APPLICATIONS A
UCEAP Transcript Title CALC & APP A
UCEAP Quarter Units 8.00
UCEAP Semester Units 5.30

Course Description
The unit provides a basic introduction to ordinary differential equations (ODEs) and classical mechanics. The ODE content is the first half of the course, which will discuss both methods and theory associated with general first and second order ODEs. A brief introduction to the concepts of scaling, non-dimensionalization and regular perturbation methods will be given. In the second half of the course, the main classical-mechanics problems that motivated the development of calculus will be introduced. Basic definitions/derivations of mechanical quantities will be provided with no prior experience required/expected. Newton's laws will be discussed and used to solve simple mechanics problems involving the motion of a single particle. Some discussion of orbital mechanics and frames of reference will be given. The first half of the course is devoted to an introduction to the study of ordinary differential equations (ODEs). In the second half of the course the application of differential equations is illustrated by an introduction to classical mechanics.

Language(s) of Instruction
English

Host Institution Course Number
MATH10222

Host Institution Course Title
CALCULUS AND APPLICATIONS A

Host Institution Course Details

Host Institution Campus
Manchester

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathematics

Course Last Reviewed

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