F18GD Mathematics for Direct Entrants

COURSE DETAILS

Course Code: F18GD
Full Course Title: Mathematics for Direct Entrants
SCQF Level: 8
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL

Undergraduate: Yes  Postgraduate Taught: No  Postgraduate Research: No

Additional Information:

COURSE AIMS

This module is designed to assist direct entry students to get to grips with second year Mathematics, by reviewing material from first year that they have not covered in their school syllabus.

LEARNING OUTCOMES – SUBJECT MASTERY

By the end of the course, students should be able to:

- understand and be able to use the language of sets, Venn diagrams, etc.
- perform standard algebraic manipulations on complex numbers
- add and multiply matrices, compute determinants
- manipulate vectors, compute scalar product and vector product
- differentiate and integrate standard functions
- determine convergence or otherwise of sequences and series; compute limits
- solve simple first and second order differential equations
- develop the first order differential equation to model physical situations involving growth and decay
- solve problems on projectile motion in 1D
- use MAPLE as a mathematical tool

LEARNING OUTCOMES – PERSONAL ABILITIES

- Demonstrate the ability to learn independently
- Demonstrate knowledge of an area of mathematics.
- Manage time, work to deadlines and prioritise workloads

SYLLABUS

Topics from the following, depending on individual student background.

Algebra: Set theory, complex numbers, matrices, vectors.
F18GD Mathematics for Direct Entrants

Calculus: Limits, differentiation, sequences and series, integration, differential equations, modelling through first and second order differential equations.

Computer Algebra: Introduction to MAPLE (a Computer Algebra package for general mathematical use).

COURSE RELATIONSHIPS
N/A

LOCATION AND ASSESSMENT METHODS

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