Liverpool John Moores University

Title: PURE MATHEMATICS 2
Status: Definitive
Code: **5114EDSTUD**   (117572)
Version Start Date: 01-08-2018

Owning School/Faculty: Education
Teaching School/Faculty: Education

Team	Leader
Marcus Hill	Y

Academic Level:	FHEQ5	**Credit Value:**	24	**Total Delivered Hours:**	51
Total Learning Hours:	240	**Private Study:**	189		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	32
Online	8
Workshop	8

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS2	Terminal Assessment	50	3
Portfolio	AS1	Proofs	50	

Aims

To develop knowledge and techniques in the foundations of calculus, functions expressed parametrically, functions of multiple variables and ordinary differential equations. To develop a further appreciation of the connection between these and other areas of mathematics.

Learning Outcomes

After completing the module the student should be able to:

1 Understand and be able to use in proofs the foundations of calculus using the limit of gradients of chords and the computations of areas under curves, and to understand the fundamental theorem of calculus
2 Formulate and solve problems involving functions in two dimensions expressed parametrically, including those involving calculus.
3 Formulate and solve problems involving functions of two variables and simple functions of several variables.
4 Formulate and solve problems involving simple ordinary differential equations of the first and second degrees.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Assignment 2   2   3   4

Assignment 1   1

Outline Syllabus

Basic ideas of limits.
The foundations of differentiation.
The foundations of integration.
The fundamental theorem of calculus.
Functions expressed parametrically, including calculus.
Functions of multiple variables, including calculus.
First order ordinary differential equations: simple, linear, variable separable,
Bernoulli, homogenous and some examples of their applications.
Second order homogenous ordinary differential equations.
The equations of simple harmonic motion.

Learning Activities

Lectures, workshops and independent learning activities

Notes

Core course for Mathematics and Education Studies