

## Liverpool John Moores University

Title: MATHEMATICS 3  
Status: Definitive  
Code: **3003ENGPT** (119543)  
Version Start Date: 01-08-2016

Owning School/Faculty: General Engineering Research Institute  
Teaching School/Faculty: General Engineering Research Institute

Team	Leader
Xun Chen	Y

**Academic Level:** FHEQ3      **Credit Value:** 12      **Total Delivered Hours:** 18  
**Total Learning Hours:** 120      **Private Study:** 102

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Workshop	18

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	in class tests	50	
Test	AS2	computer based exercises	50	

### Aims

*To strengthen the understanding of elementary calculus and its applications for those students whose mathematical qualification is less than A level or equivalent*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate elementary methods of differentiation in simple case studies
- 2 Demonstrate elementary methods of integration in simple case studies
- 3 Demonstrate elementary numerical integration in simple case studies

### Learning Outcomes of Assessments

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

In Class	1	2	3
computer exercise	1	2	3

### Outline Syllabus

*Differentiation: slopes, rates of change.*

*Differentiation of simple explicit functions: powers, trigonometric functions, exponential functions, logarithmic functions.*

*Turning points of curves.*

*Applications of maxima and minima.*

*Integration of simple functions: powers, trigonometric functions, exponential functions, logarithmic functions.*

*Definite and indefinite integrals.*

*Applications to areas.*

*Numerical integration: Simpson's rule*

### Learning Activities

The module is delivered via a computer aided learning package with tutor support available throughout workshop sessions and via email. Additional drop in sessions are also available.

### Notes

This module aims to strengthen the understanding of elementary calculus and its applications for those students whose mathematical qualification is less than A level or equivalent, and allow progression to further mathematics modules