

## Liverpool John Moores University

Title: ESSENTIAL APPLIED MATHEMATICS  
Status: Definitive  
Code: **6010PSM** (104207)  
Version Start Date: 01-08-2016  
  
Owning School/Faculty: Education  
Teaching School/Faculty: Education

Team	Leader
Neil Stanley	Y
Marcus Hill	

**Academic Level:** FHEQ6      **Credit Value:** 24      **Total Delivered Hours:** 50  
**Total Learning Hours:** 240      **Private Study:** 190

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	28
Seminar	20

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Two part exam	50	2
Essay	Writ/Prob	(3000 word equivalent) Two components	50	

### Aims

*This module aims to deepen students' knowledge of statistics, and decision mathematics to A Level standard. The knowledge and skills they gain will enable them to solve a wide variety of problems. Students will be encouraged to reflect on their learning and consider effective strategies for teaching mathematics at higher levels.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Select and use appropriate statistical techniques to the solution of applied problems in unseen contexts.
- 2 Understand and apply a range of modelling techniques based on statistical analysis decision mathematics with appreciation of the limitations of the model and the need to validate and revise models.
- 3 Employ appropriate technological tools to find exact or approximate solutions to a variety of mathematical problems.

## Learning Outcomes of Assessments

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

EXAM	1	2	
Stats writing - Problem solvin	1	2	3

## Outline Syllabus

*The module will focus on the following broad topics:*

*Probability theory  
Descriptive statistics  
Correlation and regression  
Binomial distribution  
Poisson distribution  
Normal distribution  
Linear programming  
Graphs and Networks  
Algorithms*

## Learning Activities

Mathematical concepts will be explored in of interactive lectures and workshops backed up by tasks for independent learning. These will use a mix of media e.g. web-based materials including video tutorials and on-line practice exercises, practical activities using ICT as well as more traditional text-book approaches.

## Notes

This module extends introduces students to the principal concepts underlying statistical analysis, classical mechanics and the processes of decision mathematics.

