Liverpool John Moores University

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Title: FURTHER PURE & APPLIED MATHEMATICS
Status: Definitive
Code: **5210PSM**   (104205)
Version Start Date: 01-08-2016

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

Team	Leader
Neil Stanley	Y
Marcus Hill	

Academic Level: FHEQ5   **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	24
Seminar	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Two part exam	50	2
Test	Task	Calculus tasks (1500 words)	0	
Essay	Writing	Critical writing on statistics (1500 words)	50	

Aims

To extend students' knowledge of statistical and calculus techniques and applications beyond A Level standard and provide them with a mathematical knowledge and skills enabling them to apply theoretical concepts to a wide variety of

situations.

Learning Outcomes

After completing the module the student should be able to:

1   Apply mathematical operations appropriate to the analysis of data
2   Understand the nature of different statistical distributions and the incidence of these distributions in relation to particular data type
3   Analyse, interpret and meaningfully apply statistical theory to data
4   Apply their extended knowledge of calculus to model a variety of 'real life' situtations
5   Demonstrate an ability to communicate their extended mathematical understanding to others.

Learning Outcomes of Assessments

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

EXAM   2

Calc problems   4

Stats writing   1   3   5

Outline Syllabus

Probability theory (including conditional probability)
Descriptive statistics (measures of average and spread)
Correlation and regression
Binomial distribution
Poisson distribution
Normal distribution
Linear programming
Trigonometric and inverse trigonometric functions
First order differential equations
Numerical methods of integration
Applications of calculus
Partial fractions

Learning Activities

Students will undertake a variety of mathematical tasks, both theoretical and in application to real world problems. These will be presented through interactive lectures and tackled in workshops and through independent study.

Notes

This module extends students' knowledge of calculus beyond A Level standard and introduces them to the processes of linear programming and the principal concepts underlying statistical analysis.