

Liverpool John Moores University

Title: APPLIED MATHEMATICS
Status: Definitive
Code: **5202CIV** (122927)
Version Start Date: 01-08-2021

Owning School/Faculty: Civil Engineering and Built Environment
Teaching School/Faculty: Civil Engineering and Built Environment

Team	Leader
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Academic Level: FHEQ5 **Credit Value:** 10 **Total Delivered Hours:** 34.5
Total Learning Hours: 100 **Private Study:** 65.5

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	22
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	EXAMINATION	100	1.5

Aims

To develop knowledge and understanding of the probability theory and statistics underpinning engineering, and to apply these techniques within an engineering context.

To further develop the knowledge and understanding of relevant mathematical techniques underpinning engineering, and to apply these within an engineering context.

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate knowledge and understanding of probability, and apply the theory proficiently and critically to the solution of engineering problems.
- 2 Apply a range of statistical methods, tools and notations proficiently in the analysis and solution of engineering problems.
- 3 Apply wave theory and basic mass and string models proficiently in the analysis and solution of engineering problems.

Learning Outcomes of Assessments

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

EXAMINATION	1	2	3
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Outline Syllabus

Probability

Discrete and continuous distributions

Hypothesis testing: Mann Whitney, t-test, Chi-squared

Correlation and regression.

Monte Carlo method

2nd order differential equations: homogeneous and inhomogeneous

Partial Differentiation

Partial Differential Equations: Waves on a string

Learning Activities

A combination of lectures and tutorials.

Notes

This module develops the student's knowledge and understanding of engineering mathematics and statistics, and their limitations, for use in the analysis and solution of engineering problems.