

Summary Information

Module Code	5339BEUG
Formal Module Title	Applied Mathematics
Owning School	Civil Engineering and Built Environment
Career	Undergraduate
Credits	10
Academic level	FHEQ Level 5
Grading Schema	40

Module Contacts
Module Leader

Contact Name	Applies to all offerings	Offerings
Badr Abdullah	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Oluwapelumi Ojuri	Yes	N/A
Stephen Wylie	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	22
Tutorial	11

Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

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.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Demonstrate knowledge and understanding of probability, and apply the theory proficiently and critically to the solution of engineering problems.
MLO2	Apply a range of statistical methods, tools and notations proficiently in the analysis and solution of engineering problems.
MLO3	Apply wave theory and basic mass and string models proficiently in the analysis and solution of engineering problems.

Module Content

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

Module Overview
This module aims to develop knowledge and understanding of the probability theory and statistics underpinning engineering, alongside other relevant mathematical techniques, and to apply these techniques within an engineering context.

Additional Information

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. On the Building Services Engineering Degree Apprenticeship programme, the knowledge learning outcomes are K1, K2 and the skills learning outcomes is S1.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Centralised Exam	Examination	100	1.5	MLO3, MLO2, MLO1