

Module Specification

Module Summary Information

1	Module Title	Mathematical Modelling 1
2	Module Credits	20
3	Module Level	4
4	Module Code	ENG4124

5	Module Overview
<p>Mathematics plays a key role in establishing and grounding the skills of an engineer, and the ability to communicate the ideas of engineering that are expected of an engineering graduates.</p> <p>The primary aim of this module is to provide the fundamental mathematical knowledge and techniques needed in order to enable you to use and apply such mathematical techniques for the evaluation, analysis, modelling and solution of realistic engineering problems. Application of these data sets has to include their interpretation both to and from the mathematical language. In addition, this module will introduce students to mathematical modelling software package. This will be used to plot, annotate basic signals and write simple programs to compute mathematical problems.</p> <p>This module will develop your ability to both work on and communicate engineering realities to a wider audience, at a professional standard.</p>	

6	Indicative Content
<p>This module covers: Differentiation, Maxima and minima, Curve fitting, Statistics and probability, Normal and Poisson distribution, Integration, Vectors and complex numbers. Algebra in MATLAB, Basics in programming, Vectors and matrices, plotting and graphics</p>	

7	Module Learning Outcomes
On successful completion of the module, students will be able to:	
1	Employ statistical techniques to formulate solutions to engineering problems
2	Apply integration and differentiation techniques to compute the characteristics of signals
3	Discuss and apply complex numbers to solve engineering problems
4	Recall techniques used to compute solutions using mathematical modelling software package.

8 Module Assessment				
Learning Outcome		Coursework	Exam	In-Person
1-4		30%	70%	

9 Breakdown Learning and Teaching Activities	
Learning Activities	Hours
Scheduled Learning (SL) includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	48 hours (2 hours lecture + 2 hours tutorial) peer group for 12 weeks
Directed Learning (DL) includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	Non
Private Study (PS) includes preparation for exams	152
Total Study Hours:	200