

Module Specification

Module Summary Information

1	Module Title	Mathematics for Engineers 2
2	Module Credits	20
3	Module Level	3
4	Module Code	ENG3012

5	Module Overview
<p>Mathematics plays a key role in establishing and grounding the professional skills of an engineer. Communicating the ideas of engineering is made both easier and harder by the use of mathematical language.</p> <p>This module aims to help you become proficient at further developing engineering models and arguments, and following them through to their logical conclusions, since application of these arguments has to include their interpretation both to and from the mathematical language.</p> <p>This module will further develop your ability to both work on and communicate engineering truths to a wider audience, at a professional standard.</p> <p>The module also enables you to learn and develop key, transferable skills which are essential components for use in other modules on the course and beyond.</p>	

6	Indicative Content
<p>Differentiation topics:</p> <p>Negative and fractional, Gradients, differentiation of trig, exponential and linear, Maximum and minimum of a function, Products, quotients and functions of a function.</p> <p>Integration topics:</p> <p>Limits, areas under curves, integration by substitution and integration by parts. Partial fractions, Differential Equations, Trapezoidal and Simpson rules</p>	

7	Module Learning Outcomes
On successful completion of the module, students will be able to:	
1	Mathematical model of simple systems.
2	Differentiate functions and find turning points.
3	Integrate functions to find areas under curves.
4	Simplify expressions using partial fractions and use numerical methods for integration.

8	Module Assessment		
Learning Outcome			
	Coursework	Exam	In-Person
1-4	X	X	

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	72	
Directed Learning (DL) includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	0	
Private Study (PS) includes preparation for exams	128	
Total Study Hours:	200	