



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Foundation Engineering for Designers		
Module Code	UBLMWM-15-0	Level	Level 3
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Architecture and the Built Environment
Department	FET Dept of Architecture & Built Environment		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Overview:</b> This module is an introduction to mechanical engineering principles through applied mathematics.</p> <p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> The syllabus may change slightly from year to year to include all or some key subjects in response to the needs of the students and specific project assignments in this and other modules in the programme.</p> <p>Introduction to Engineering</p> <p>What is Engineering, and the relationship between designing and engineering. Case studies shall be explored such as mechanical products (e.g. bicycles, desk lamps, chairs etc.) and building materials and structures. Units: mass, weight volume and area, density, measurement, accuracy and precision.</p> <p>Mathematics</p> <p>Basic Algebra. Factorisation. Algebraic Fractions, Linear Equations. Rearranging Formulae. Arithmetic and Geometric Series. Graphical methods. Geometry.</p>

## STUDENT AND ACADEMIC SERVICES

<p>Applied Mathematics</p> <p>Areas, volumes, angles, forces, stress, strain, weight, mechanisms.</p> <p>Data Analysis</p> <p>Introduction to spreadsheets and basic data manipulation and analysis.</p> <p><b>Teaching and Learning Methods:</b> See Outline Syllabus and Assessment.</p>
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### Part 3: Assessment

Component A Exam - an end of module examination has been chosen to test numeracy and the understanding and knowledge of the fundamentals of physics, engineering and mathematics under controlled conditions.

Component B Engineering portfolio - assessment is mixed deliverables; calculations, prototypes and process books. These have been chosen to ensure students can demonstrate practical and theoretical understanding of how products work, solve simple engineering design problems, display cognitive skills with respect to simplifying real problems and apply mathematical methods of analysis.

First Sit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	25 %	Examination (online)
Portfolio - Component B		75 %	Engineering portfolio (1500 words)
Resit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	25 %	Examination (online)
Portfolio - Component B		75 %	Engineering Portfolio (1500 words)

### Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	<b>Module Learning Outcomes</b>	
	Perform numerical calculations to an appropriate level of accuracy to applied design problems associated with physics and mechanical principles	MO1
	Interpret an algebraic expression and select an appropriate method for changing the subject of the expression	MO2
	Select and apply suitable mathematical techniques to solve extended problems	MO3
	Demonstrate awareness of the fundamental physics and mechanical principles	MO4
Contact Hours	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	114

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	<b>Total Independent Study Hours:</b>	114
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	36
	<b>Total Scheduled Learning and Teaching Hours:</b>	36
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/modules/ublmwm-15-0.html">https://uwe.rl.talis.com/modules/ublmwm-15-0.html</a></p>	

### Part 5: Contributes Towards

This module contributes towards the following programmes of study: