



MODULE SPECIFICATION

Part 1: Information			
Module Title	Foundation Engineering for Designers		
Module Code	UBLMWM-15-0	Level	Level 3
For implementation from	2018-19		
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 Environ		
Contributes towards	<p>Product Design {Foundation} [Sep][FT][Frenchay][4yrs] BA (Hons) 2018-19</p> <p>Architecture and Environmental Engineering {Foundation} [Sep][SW][Frenchay][6yrs] BEng (Hons) 2018-19</p> <p>Architecture and Environmental Engineering {Foundation} [Sep][FT][Frenchay][5yrs] BEng (Hons) 2018-19</p> <p>Interior Architecture (International) {Foundation} [Sep][SW][Frenchay][6yrs] BA (Hons) 2018-19</p> <p>Architecture and Planning {Foundation} [Sep][FT][Frenchay][5yrs] BA (Hons) 2018-19</p> <p>Interior Architecture (International) {Foundation} [Sep][FT][Frenchay][5yrs] BA (Hons) 2018-19</p> <p>Product Design Technology {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19</p> <p>Product Design Technology {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19</p> <p>Creative Product Design {Foundation} [Sep][FT][Frenchay][4yrs] BA (Hons) 2018-19</p> <p>Creative Product Design {Foundation} [Sep][SW][Frenchay][5yrs] BA (Hons) 2017-18</p> <p>Product Design {Foundation} [Sep][SW][Frenchay][5yrs] BA (Hons) 2018-19</p> <p>Architecture {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19</p> <p>Interior Architecture {Foundation} [Sep][FT][Frenchay][4yrs] BA (Hons) 2018-19</p> <p>Architectural Technology and Design {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19</p> <p>Architectural Technology and Design {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19</p> <p>Interior Architecture {Foundation} [Sep][SW][Frenchay][5yrs] BA (Hons) 2018-19</p>		
Module type:	Standard		
Pre-requisites	None		

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Excluded Combinations	None
Co- requisites	None
Module Entry requirements	None

Part 2: Description

Overview: This module is an introduction to mechanical engineering principles through applied mathematics.

Educational Aims: See Learning Outcomes

Outline Syllabus: 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.

Introduction to Engineering

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.

Mathematics

Basic Algebra. Factorisation. Algebraic Fractions, Linear Equations. Rearranging Formulae. Arithmetic and Geometric Series. Graphical methods. Geometry.

Applied Mathematics

Areas, volumes, angles, forces, stress, strain, weight, mechanisms.

Data Analysis

Introduction to spreadsheets and basic data manipulation and analysis.

Teaching and Learning Methods: See Outline Syllabus and Assessment.

Part 3: Assessment

Component A Exam - a two hour 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.

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First Sit Components	Final Assessment	Element weighting	Description
Portfolio - Component B		75 %	Engineering portfolio (1500 words)
Examination - Component A	✓	25 %	Examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Portfolio - Component B		75 %	Engineering Portfolio (1500 words)
Examination - Component A	✓	25 %	Examination (2 hours)

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will be able to:	
	Module Learning Outcomes	
	MO1 Perform numerical calculations to an appropriate level of accuracy to applied design problems associated with physics and mechanical principles	
	MO2 Interpret an algebraic expression and select an appropriate method for changing the subject of the expression	
	MO3 Select and apply suitable mathematical techniques to solve extended problems	
	MO4 Demonstrate awareness of the fundamental physics and mechanical principles	
Contact Hours	Contact Hours	
	Independent Study Hours:	
	Independent study/self-guided study	114
	Total Independent Study Hours:	114
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150

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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ublmwm-15-0.html</p>
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