



Module Specification

Foundation Engineering

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Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	3
Part 4: Assessment.....	4
Part 5: Contributes towards	6

Part 1: Information

Module title: Foundation Engineering

Module code: UBLMWM-15-0

Level: Level 3

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Architecture & Built Environ

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Architecture and the Built Environment

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

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

Features: Not applicable

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.

Part 3: Teaching and learning methods

Teaching and learning methods: See Outline Syllabus and Assessment.

Module Learning outcomes: On successful completion of this module students will achieve the following 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

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ublmwm-15-0.html) via the following link <https://uwe.rl.talis.com/modules/ublmwm-15-0.html>

Part 4: Assessment

Assessment strategy: Online 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. The exam will take 2 hours and can be taken any time within a 24 hour window.

Portfolio - consisting of a series of short weekly engineering tests comprising of calculations, prototypes and processes. 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.

Resit Online Exam - an exam of the same format as above, with different range of questions.

Resit Portfolio - a similar brief to that described above except the full portfolio will be submitted by a deadline rather than weekly. Tests may include an adjusted topic choice.

Assessment components:**Examination (Online) (First Sit)**

Description: Online exam. (2 hours within a 24 hour window)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO4

Portfolio (First Sit)

Description: Portfolio - weekly tests (1500 words)

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Examination (Online) (Resit)

Description: Online exam. (2 hours within a 24 hour window)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO4

Portfolio (Resit)

Description: Portfolio (1500 words)

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architectural Technology and Design {Foundation} [GCET] BSc (Hons) 2023-24

Architectural Technology and Design {Foundation} [GCET] DipHE 2023-24