# Module Specification

## Engineering Experimentation

Version: 2023-24, v2.0, 13 Mar 2023

**Contents**

## Part 1: Information

**Module title:** Engineering Experimentation

**Module code:** UFMFEG-30-0

**Level:** Level 3

**For implementation from:** 2023-24

**UWE credit rating:** 30

**ECTS credit rating:** 15

**College:** College of Arts, Technology and Environment

**School:** CATE School of Engineering

**Partner institutions:** None

**Field:** Engineering, Design and Mathematics

**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:** Not applicable

**Features:** Not applicable

**Educational aims:** See Learning Outcomes

**Outline syllabus:** A varied and diverse mixture of laboratory and workshop activities will be undertaken intended to demonstrate the range and flavour of the many degree programmes that foundation engineering students may progress to. For

example, students may receive sessions relating to Robotics, Mechanical Engineering, Automotive Engineering, Aerospace Engineering and Electronic Engineering. Topics may include a combination of the following: Programming of industrial robots; Assembly and test of electronic circuits; Investigation of mechanical systems; Experimental investigation and tests on mechanical structures; Basic tests on fluid flow; Machine Vision; Aerodynamics; Design and Manufacture.

## Part 3: Teaching and learning methods

**Teaching and learning methods:** Scheduled teaching and learning includes timetabled laboratory and workshop sessions in small groups rotating around the individual activities.

Independent learning includes hours engaged in research, investigation, analysis and preparation of laboratory records.

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

**MO1** Demonstrate the basic skills of experimentation including: analysis of experimental data; collection of relevant experimental data; reporting and presentation of experimental work and findings and drawing conclusions.

**MO2** Safely perform experimental work in a laboratory or workshop environment, applying and understanding appropriate techniques to obtain, record and analyse data.

**MO3** Assemble and test pre-designed electronic circuits and have a rudimentary understanding of analysis of their performance.

**MO4** Prepare laboratory reports based on information recorded in the laboratory log book and demonstrate progression towards independent investigation, research and learning.

**Hours to be allocated:** 300

**Contact hours:**

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

**Reading list:** The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ufmfeg-30-0.html

## Part 4: Assessment

**Assessment strategy:** Assessment of this module is based on the student's engagement and competence in the laboratory activities sessions. Students will be assessed during and at the end of each session to support student development and provide feed-forward opportunities. Students will be required to complete a self-grading and peer-grading at the end of each session to provide an opportunity for reflection and identify strengths and areas of development.

The final moderation of the assessment will be made after the final hand-in of the laboratory exercises. Attendance at the timetabled session will be monitored and compulsory for assessment of that activity. (Pass/Fail)

The Resit strategy will be a 2-page report based on 4 labs (8 pages in total). The lab report should include background, health and safety and the lab content (experiment, results and conclusion).

**Assessment tasks:**

**Laboratory Report** (First Sit)
Description: Laboratory exercises to assess student practical engineering skills and competence.
This is a Pass/Fail assessment.
Weighting:
Final assessment: Yes

Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

**Laboratory Report** (Resit)
Description: Laboratory exercises to assess student practical engineering skills and competence.
This is a Pass/Fail assessment.

The Resit strategy will be a 2-page report based on 4 labs (8 pages in total). The lab report should include background, health and safety and the lab content (experiment, results and conclusion)
Weighting:
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

## Part 5: Contributes towards

This module contributes towards the following programmes of study:

Automotive Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Robotics {Foundation} [Frenchay] BEng (Hons) 2023-24

Mechatronics Engineering {Foundation} [Frenchay] MEng 2023-24

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] BEng (Hons) 2023-24

Mechanical Engineering and Technology {Foundation} [GCET] BEng (Hons) 2023-24

Mechanical Engineering and Technology (Vehicle Technology) {Foundation} [GCET] BEng (Hons) 2023-24

Mechanical Engineering and Technology (Mechatronics) {Foundation} [GCET] BEng (Hons) 2023-24

Mechanical Engineering and Technology (Manufacturing) {Foundation} [GCET] BEng (Hons) 2023-24

Electronics and Telecommunication Engineering {Foundation} [GCET] BEng (Hons) 2023-24

Instrumentation and Control Engineering {Foundation} [GCET] BEng (Hons) 2023-24

Instrumentation and Control Engineering {Foundation} [GCET] BEng (Hons) 2023-24

Electronics and Telecommunication Engineering {Foundation} [GCET] DipHE 2023-24

Instrumentation and Control Engineering {Foundation} [GCET] DipHE 2023-24

Instrumentation and Control Engineering {Foundation} [GCET] DipHE 2023-24

Mechanical Engineering and Technology (Manufacturing) {Foundation} [GCET] DipHE 2023-24

Mechanical Engineering and Technology (Mechatronics) {Foundation} [GCET] DipHE 2023-24

Mechanical Engineering and Technology (Vehicle Technology) {Foundation} [GCET] DipHE 2023-24

Mechanical Engineering and Technology {Foundation} [GCET] DipHE 2023-24

Building Services Engineering {Foundation} [GCET] DipHE 2023-24

Electronic Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Aerospace Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Engineering {Foundation} [Frenchay] BSc (Hons) 2023-24

Automotive Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] BEng (Hons) 2023-24

Civil Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Mechatronics Engineering {Foundation}[Frenchay] BEng (Hons) 2023-24

Electrical and Electronic Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Building Services Engineering {Foundation} [GCET] BEng (Hons) 2023-24

Robotics {Foundation} [Frenchay] BEng (Hons) 2023-24

Mechanical Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Aerospace Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24