Module Specification

Engineering Experimentation

Version: 2022-23, v2.0, 20 Jul 2022

Contents

Part 1: Information

Module title: Engineering Experimentation

Module code: UFMFEG-30-0

Level: Level 3

For implementation from: 2022-23

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Delivery locations: Frenchay Campus, Global College of Engineering and Technology (GCET)

Field: Engineering, Design and Mathematics

Module type: Project

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)

Resit assessment strategy is the same as the first sit.

Assessment components:

Laboratory Report - Component A (First Sit)
Description: Laboratory exercises to assess student practical engineering skills and competence
Weighting:
Final assessment: Yes
Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Laboratory Report - Component A (Resit)

Description: Laboratory exercises to assess student practical engineering skills and competence

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:

Electronic Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Vehicle Technology) {Foundation} [GCET] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Manufacturing) {Foundation} [GCET] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Mechatronics) {Foundation} [GCET] BEng (Hons) 2022-23

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] BEng (Hons) 2022-23

Mechanical Engineering and Technology {Foundation} [GCET] BEng (Hons) 2022-23

Automotive Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23

Instrumentation and Control Engineering {Foundation} [GCET] BEng (Hons) 2022-23

Mechanical Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23

Civil Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23

Aerospace Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23

Engineering {Foundation}[Sep][FT][Frenchay][4yrs] BSc (Hons) 2022-23

Engineering {Foundation}[Sep][SW][Frenchay][5yrs] BSc (Hons) 2022-23

Aerospace Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Mechanical Engineering {Foundation}[Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Mechanical Engineering {Foundation}[Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Vehicle Technology) {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Mechatronics) {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Building Services Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Building Services Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Vehicle Technology) {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Mechatronics) {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Manufacturing) {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Technology (Manufacturing) {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Aerospace Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Aerospace Engineering with Pilot Studies {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Aerospace Engineering with Pilot Studies {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Automotive Engineering {Foundation}[Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Automotive Engineering {Foundation}[Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Electronic Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Electronic Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Robotics {Foundation}[Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Robotics {Foundation}[Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Computer Security and Forensics {Foundation} [Feb][FT][GCET][4yrs] BSc (Hons) 2022-23

Computer Security and Forensics {Foundation} [Oct][FT][GCET][4yrs] BSc (Hons) 2022-23

Civil and Environmental Engineering {Foundation} [Sep][FT][Frenchay][4yrs] - Not Running BEng (Hons) 2022-23

Civil and Environmental Engineering {Foundation} [Sep][SW][Frenchay][5yrs] - Not Running BEng (Hons) 2022-23

Civil Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Civil Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

Mechanical Engineering and Vehicle Technology {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Mechanical Engineering and Vehicle Technology {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Software Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Software Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Electronics and Telecommunication Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Electronics and Telecommunication Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Instrumentation and Control Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2022-23

Instrumentation and Control Engineering {Foundation} [Feb][PT][GCET][8yrs] BEng (Hons) 2022-23

Instrumentation and Control Engineering {Foundation} [Oct][PT][GCET][8yrs] BEng (Hons) 2022-23

Instrumentation and Control Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2022-23

Computer Security and Forensics {Foundation} [GCET] BSc (Hons) 2022-23

Engineering {Foundation} [Frenchay] BSc (Hons) 2022-23

Electronics and Telecommunication Engineering {Foundation} [GCET] BEng (Hons) 2022-23

Instrumentation and Control Engineering {Foundation} [GCET] BEng (Hons) 2022-23

Robotics {Foundation} [Frenchay] BEng (Hons) 2022-23

Building Services Engineering {Foundation} [GCET] BEng (Hons) 2022-23