# Module Specification

## Engineering Practice 1

Version: 2025-26, v5.0, Approved

**Contents**

## Part 1: Information

**Module title:** Engineering Practice 1

**Module code:** UFMFKS-30-1

**Level:** Level 4

**For implementation from:** 2025-26

**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:** Yes

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** This module provides a broad comprehension of the competencies and social responsibilities required in order to be a professional engineer in the workplace.

The module will develop the engineering habits of mind of:
Problem-finding, Creative problem-solving, Visualising, Systems, Thinking, Improving, and Adapting.

**Features:** Not applicable

**Educational aims:** The aim of the module is to promote the development of student engineers on their journey to becoming graduate engineers. The module therefore plays an important role in satisfying the professional awareness and development requirements of engineering awards.

**Outline syllabus:**
This module provides a broad comprehension of the competencies and social responsibilities required in order to be a professional engineer in the workplace. The module will develop the engineering habits of mind of: Problem-finding, Creative problem-solving, Visualising, Systems Thinking, Improving, and Adapting.

Holistic design thinking is important for systems engineering, and so particular focus will be placed on the role of a creative skilled practitioner to develop sustainable solutions to problems in today's world, with reference to the Sustainable Development Goals. As well as module learning materials, students will be expected to demonstrate this through module projects involving locally relevant problems, and with a consideration for sustainability issues and civic responsibility.

Engineers typically spend most of their careers working in project teams. Managing projects is a critical skill for career development. To be effective they need to understand the tools and techniques available to them and the issues associated with meeting business and personnel needs. Project management training includes time and budget planning, communication between peers and with clients, teamwork skills, and leadership opportunities.

Communication skills are therefore essential both within a professional work context, and also to engage with communities and groups that are impacted by engineering and mathematics projects and developments. Students will learn about and experience a variety of communication methods such as technical reports, laboratory reports, oral presentations, posters, and digital media. They will also experience public engagement strategies utilised by professional organisations, as well as the variety of audiences with which these skills can be practiced and explored.

Successful completion of this module will establish students ready for future learning in their degrees, ahead of being student professionals in their chosen careers. This enables students to work towards achieving the UWE graduate attributes of being Self-Reliant and Connected, Ready and Able, Enterprising, Globally Responsible and Future-Facing. Students will also begin working towards Engineering Competencies for the UK SPEC EngTech Matrix.

## Part 3: Teaching and learning methods

**Teaching and learning methods:** This module will combine lectures, class-based interactive workshops, technical workshops, and experience with the local community. The module includes time spent in simulated workplace environments (such as laboratories or workshops) in order to demonstrate technical and safe conduct in the workplace as well as professional conduct with peers.

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

**MO1** Reflect on the roles and responsibilities within a team delivering a project outcome.

**MO2** Communicate accurately and reliably in a variety of forms, demonstrating coherent argument and identify environmental issues and sustainability considerations in engineering environments.

**MO3** Apply design thinking and modelling skills including through relevant software.

**MO4** Reflect on personal strengths, developmental needs, and competencies in both an academic and professional context and engage in appropriate development activities.

**Hours to be allocated:** 300

**Contact hours:**

Independent study/self-guided study = 191 hours

Face-to-face learning = 109 hours

**Reading list:** The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/A5342B21-142B-F450-F660-31914E1AECEA.html

## Part 4: Assessment

**Assessment strategy:** The assessments will enable students to demonstrate their understanding of the engineering habits of mind, while reflecting on becoming socially responsible engineers in appropriate professional formats.

Formative feedback takes place during the module and considers the development of the student's engineering habits of mind and reflective thinking. An individual log book is maintained over the whole module as a 'container' for academic outputs at regular intervals, as evidence of professional work in progress, and to track and reflect on professional and personal development.

Formative feedback will consist of:
Discussion between peers within class workshops
Discussing between peers within the project groups
Project week feedback from professionals within the community contexts

The module will be assessed as follows:

Semester 1: Portfolio that demonstrates the application of the Engineering Habits of Mind to address real-world global challenges aligned with the UN Sustainable Development Goals. This portfolio will include the journey from problem identification to solution development, showcasing the engineering process, design iterations, and reflection on sustainability impact and ethics.

Semester 2: Technical portfolio including: Design and modelling software exercises, Project management tasks

The resit strategy has the same profile as the first sit assessment.

**Assessment tasks:**

**Portfolio** (First Sit)
Description: Technical portfolio including: Design and modelling software exercises, Project management tasks
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO3

**Portfolio** (First Sit)
Description: Portfolio that demonstrates the application of the Engineering Habits of Mind to address real-world global challenges aligned with the UN Sustainable Development Goals. This portfolio will include the journey from problem identification to solution development, showcasing the engineering process, design iterations, and reflection on sustainability impact and ethics.
Weighting: 50 %
Final assessment: No
Group work: Yes
Learning outcomes tested: MO1, MO2, MO4

**Portfolio** (Resit)
Description: Technical portfolio including: Design and modelling software exercises, Project management tasks

Resit deliverable(s) will be scaled appropriately to group size and task complexity
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO3

**Portfolio** (Resit)
Description: Referral for the Semester 1 Portfolio
Portfolio that demonstrates the application of the Engineering Habits of Mind to

address real-world global challenges aligned with the UN Sustainable Development Goals. This portfolio will include the journey from problem identification to solution development, showcasing the engineering process, design iterations, and reflection on sustainability impact and ethics.
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO4

## Part 5: Contributes towards

This module contributes towards the following programmes of study:

Civil Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Electrical and Electronic Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Aerospace Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] BEng (Hons) 2024-25

Robotics {Foundation} [Frenchay] BEng (Hons) 2024-25

Mechanical Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Automotive Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Mechatronics Engineering {Foundation} [Frenchay] MEng 2024-25

Mechatronics Engineering {Foundation}[Frenchay] BEng (Hons) 2024-25

Robotics {Foundation} [Frenchay] BEng (Hons) 2024-25

Automotive Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Aerospace Engineering {Foundation} [Frenchay] BEng (Hons) 2024-25

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] BEng (Hons) 2024-25

Mechatronics Engineering {Foundation} [Frenchay] MEng 2024-25

Mechatronics Engineering {Foundation}[Frenchay] BEng (Hons) 2024-25

Robotics {Foundation} [Frenchay] BEng (Hons) 2024-25

Mechatronics Engineering [Frenchay] MEng 2025-26

Aerospace Engineering [Frenchay] BEng (Hons) 2025-26

Automotive Engineering [Frenchay] BEng (Hons) 2025-26

Aerospace Engineering [Frenchay] MEng 2025-26

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2025-26

Robotics [Frenchay] BEng (Hons) 2025-26

Mechatronics {Apprenticeship-UCW} [UCW] FdSc 2025-26

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [UCW] BEng (Hons) 2025-26

Mechanical Engineering [Frenchay] BEng (Hons) 2025-26

Mechanical Engineering [Frenchay] BEng (Hons) 2025-26

Mechanical Engineering [Frenchay] MEng 2025-26

Mechanical Engineering [Frenchay] MEng 2025-26

Mechanical Engineering {Apprenticeship-UCW} [UCW] FdSc 2025-26

Mechanical Engineering {Apprenticeship-GlosColl} [GlosColl] FdSc 2025-26

Aerospace Engineering with Pilot Studies [Frenchay] BEng (Hons) 2025-26

Civil Engineering [Frenchay] BEng (Hons) 2025-26

Civil Engineering [Frenchay] BEng (Hons) 2025-26

Civil Engineering {Apprenticeship-UWE} [Frenchay] BEng (Hons) 2025-26

Electrical and Electronic Engineering [Frenchay] BEng (Hons) 2025-26

Electrical and Electronic Engineering [Frenchay] BEng (Hons) 2025-26

Mechatronics Engineering [Frenchay] BEng (Hons) 2025-26

Aerospace Engineering {Apprenticeship-UWE} [UCW] BEng (Hons) 2025-26

Civil Engineering [Frenchay] MEng 2025-26

Civil Engineering {Apprenticeship-UWE} [Frenchay] BEng (Hons) 2025-26

Aerospace Engineering [Frenchay] MEng 2025-26

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2025-26

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2025-26

Aerospace Engineering [Frenchay] MEng 2025-26

Mechanical Engineering with Manufacturing {Apprenticeship-UCW} [UCW] BEng (Hons) 2025-26

Mechanical Engineering [Frenchay] MEng 2025-26

Mechanical Engineering [Frenchay] MEng 2025-26