



Module Specification

Engineering Practice 2

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Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	5
Part 4: Assessment.....	6
Part 5: Contributes towards	8

Part 1: Information

Module title: Engineering Practice 2

Module code: UFMFQS-15-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Field: Engineering, Design and Mathematics

Module type: Module

Pre-requisites: Engineering Practice 1 2022-23, Engineering Practice 1b 2022-23

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: In today's business environment, project management is used by both public and private sector organisations to create innovative business ideas that support profit maximization, economic and societal development. This module is a continuation of Engineering Practice 1 where students were introduced to project management ideas and reflected on the role of engineers in business and society. In this module students are introduced to the remaining part of project life cycle such as Project Execution, Closure and Review.

Students will be involved in Project Execution to implement a project management plan through the project plan, monitoring and control, change control management, team leadership and conflict management. The module will allow students understand how to commercialise an engineering solution (business idea) and is designed to help engineering students understand the overall scope of starting an innovative business using engineering solutions.

The module also covers the Closure and Review phase concerned with handover of final project outputs and acceptance of the outputs by the project sponsor. This phase will enable the students to understand the process required to prepare the acceptance of delivery by the users, handover of the delivery from project to production environment, review processes team disbandment and the distribution of the lessons learnt.

Today's business world remains dynamic and competitive, and the module focuses will enable students to identify potential areas of innovative business opportunities together with the internal and external forces that play against and supports the thriving of innovative business ideas.

Pre-requisites: students must take one out of UFMFKS-30-1 Engineering Practice 1 and UFMFXT-15-1 Engineering Practice 1b

Features: Not applicable

Educational aims: The module is designed to ensure that students engage with the commercial and professional environment and practices that operate in engineering organisations and environments.

Outline syllabus: The module content covers Project Management Processes (A) and Engineering Business Environment (B) and links these areas together.

Outline syllabus

Specifically students will learn about

Business Model Canvass

The analysis of Business Environment

Finance for Innovative Business

Business Systems and Management

Managing People in Organisation

Business and Sustainability

Processes required for effective execution of the project management plan

Effective decision-making during project monitoring and control

Processes required for the Change Control Management, Team Leadership and Conflict Management

Stakeholder management

A Project Execution Plan and consideration of the commercial exploitation of an innovative engineering solution will be implemented through a real life engineering project.

In addition, project based learning activities will be provided to allow students to

Identify the main steps required for exploiting an enterprise idea or opportunity to initiate and commercialise a start-up enterprise.

Analyse and design a viable business model that can be used to create values for potential customers

Recognise the internal and external forces that can hinder or facilitates the commercialisation of innovative business ideas

Develop their branding, sales, time management, problem solving and communication skills

Identify the roles and responsibilities that are required to contribute to effective project management.

Part 3: Teaching and learning methods

Teaching and learning methods: Part A and B

One hour lecture per week delivered by the module team and guest speakers from industry, providing the students with a detailed process of project execution and handover (A) and practical knowledge of what it takes to initiate and commercialise an innovative business idea (B).

Two hour tutorial per week that focuses on developing student's project management skills (A) and entrepreneurial skills (B) through team work and exploration of each of the topic areas covered during the lecture.

Project Based Learning is used to facilitate learning in Part A, and is a student-centred learning approach that mirrors the professional behaviour of an engineer and provides opportunity for students to work as a team, manage time and resources to deliver small projects within an individual discipline.

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

MO1 Select and apply appropriate processes for effective management within a project life cycle (EL3, P11, G1, G3, G4)

MO2 Demonstrate effective evidence based decision making resulting from the execution of a project management plan. (EL3, D5, D6, P11)

MO3 Identify and appraise the main steps required to exploit an enterprise idea or opportunity to initiate and commercialise a start-up enterprise or engineering solution (D8m, EL4, P1, P4, P11)

MO4 Analyse and design a viable business model including the identification of factors that impact the commercialisation of an innovative business idea. (D6, EL6, P4, P7, P11)

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 54 hours

Face-to-face learning = 96 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/ufmgqs-15-2.html) via the following link <https://uwe.rl.talis.com/modules/ufmgqs-15-2.html>

Part 4: Assessment

Assessment strategy: The assessment for this module is as follows:

Presentation:

The students will work in group of 7 and are tasked to present a poster that shows the conception and initiation of novel engineering solution required to tackle the current social and environmental issues faced by the local councils in the UK.

The proposed engineering solution could be an innovation or an improvement of existing projects in the region. The technical depth of the proposed solution would be as important as the detail considerations for its social, environmental and economic impacts. The poster will contain the Scope statement for the project, Stakeholder identification and analysis, Activity list, Work Breakdown Structure (WBS), Responsibility Matrix, Resource Sheet, Cost Structure, Risk Management and individual reflection on the group work.

Reoprt:

A group report of 4,000 words, designed to evaluate the theoretical model “Business Model Canvass” that was covered by the module. Applying this model, the students develop a business plan for the innovative idea conceived in Component A. The business plan will show how the students intend to launch and put the innovative idea in B into operation. Formative assessment is provided during the two-hour tutorial per week that is focused on developing the student’s entrepreneurial skills through teamwork and exploration of each of the topic areas covered during the lecture.

Resit Assessment students will evaluate a model for a scaled down engineering business problem

Assessment tasks:

Report (First Sit)

Description: Group Report (4000 words)

Weighting: 75 %

Final assessment: Yes

Group work: Yes

Learning outcomes tested: MO3, MO4

Presentation (First Sit)

Description: Group Poster Presentation (15 minutes).

Weighting: 25 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO1, MO2

Report (Resit)

Description: Group Report (4000 words)

Resit deliverable(s) will be scaled appropriately to group size and task complexity

Weighting: 75 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO3, MO4

Presentation (Resit)

Description: Group Poster Presentation (15 minutes).

Resit deliverable(s) will be scaled appropriately to group size and task complexity

Weighting: 25 %

Final assessment: Yes

Group work: Yes

Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Aerospace Engineering {Apprenticeship-UCW} [UCW] BEng (Hons) 2022-23

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

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

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2022-23

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

Automotive Engineering [Frenchay] MEng 2022-23

Mechanical Engineering [Frenchay] MEng 2022-23

Aerospace Engineering [Frenchay] MEng 2022-23

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

Electronic and Computer Engineering [GlosColl] BEng (Hons) 2022-23

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

Electronic and Computer Engineering [Frenchay] BEng (Hons) 2022-23

Robotics [Frenchay] BEng (Hons) 2022-23

Mechanical Engineering {Apprenticeship-UCW} [UCW] FdSc 2022-23

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [UCW] BEng (Hons) 2022-23

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [COBC] BEng (Hons) 2022-23

Aerospace Engineering {Apprenticeship-UWE} [UCW] BEng (Hons) 2022-23

Electronic and Computer Engineering {Apprenticeship-GLOSCOLL} [GlosColl] BEng (Hons) 2022-23

Mechatronics {Apprenticeship-UCW} [UCW] FdSc 2022-23

Mechanical Engineering {Foundation}[Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Mechanical Engineering {Foundation}[Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Aerospace Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Electronic Engineering [Sep][PT][Frenchay][6yrs] BEng (Hons) 2021-22

Aerospace Engineering {Apprenticeship-UCW} [Sep][FT][UCW][5yrs] BEng (Hons) 2021-22

Aerospace Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Aerospace Engineering with Pilot Studies {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Aerospace Engineering with Pilot Studies {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Automotive Engineering {Foundation}[Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Automotive Engineering {Foundation}[Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Electronic Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Electronic Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Robotics {Foundation}[Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Robotics {Foundation}[Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Mechanical Engineering {Apprenticeship-UCS} [Sep][FT][UCS][3yrs] FdSc 2021-22

Mechanical Engineering {Apprenticeship-GlosColl} [Sep][FT][GlosColl][3yrs] FdSc 2021-22

Mechanical Engineering [Sep][PT][Frenchay][7yrs] MEng 2020-21

Mechanical Engineering [Sep][PT][Frenchay][6yrs] BEng (Hons) 2020-21