



Module Specification

Design for Manufacturing, Assembly and Environment

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Part 1: Information

Module title: Design for Manufacturing, Assembly and Environment

Module code: UFMFN8-15-2

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: Design, Materials and Manufacturing 2023-24

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: In this module you will examine the principles, tools and techniques for developing artefacts that are easy to manufacture and assemble, and with economic and environmental material utilisation through design methodologies and process selection.

Outline syllabus: The syllabus includes:

Introduction to principles of design for 'x' techniques.

Schemes for integration of design with wider manufacturing activities.

Design for manufacturing processes.

Design for machining, forming, sheet metal forming, welding, ALM.

Design for manual, automatic and robot assembly.

Design for Environment.

DFM/A/E guidelines for implementation.

Virtual manufacturing support.

Quantitative evaluation methodologies for artefact and process.

Economic materials selection and environmental evaluation.

Part 3: Teaching and learning methods

Teaching and learning methods: See Assessment Strategy.

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

MO1 Justify the implementation of Design for 'x' strategies

MO2 Demonstrate the application of machine-material interaction evaluations

MO3 Implement design principles for efficient manufacture and assembly processes

MO4 Critically evaluate the existing company/corporate environment to support implementation of Design for 'x' strategies

MO5 Appraise material selection to minimise manufacturing costs and environmental impact

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/ufmfn8-15-2.html) via the following link <https://uwe.rl.talis.com/modules/ufmfn8-15-2.html>

Part 4: Assessment

Assessment strategy: The main sit strategy will be as follows:

Assessment Task 1: The student is required to present their findings from the assignment (Assessment Task 2). The student will be examined orally to ascertain what the student knows and the depth of understanding of the justifications and implementation of Design for 'x', based upon the findings of the assignment (Assessment Task 2).

Assessment Task 2: A written assignment submitted at the end of the module. The assignment is designed to assess the students' understanding and application of the various aspects of design for 'x' and material selection applied in an industrial scenario.

The resit strategy will be as follows:

Assessment Task 1: Will provide the student with the opportunity present and orally defend the reworked material.

Assessment Task 2: Will provide the student with the opportunity to rework the written assignment, or where this is the first attempt a different scenario shall be provided.

Risk of plagiarism will be mitigated by the individualised variables and data being issues to students with the assignment brief.

Assessment tasks:

Presentation (First Sit)

Description: Assessment Task 1: 30 minute individual presentation and oral examination (20 minute presentation and 10 minutes of questioning)

Weighting: 40 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO5

Report (First Sit)

Description: 3000 word industrial-based report

Weighting: 60 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4, MO5

Presentation (Resit)

Description: Assessment Task 2: 30 minute individual Presentation and oral examination (20 minute presentation and 10 minutes of questioning)

Weighting: 40 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO5

Report (Resit)

Description: Assessment Task 2: Coursework assignment - new 3000 word industrial-based report.

Weighting: 60 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4, MO5

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Mechanical Engineering and Technology (Manufacturing) {Foundation}
[Feb][FT][GCET][4yrs] BEng (Hons) 2021-22

Mechanical Engineering and Technology (Manufacturing) {Foundation}
[Oct][FT][GCET][4yrs] BEng (Hons) 2021-22