



Module Specification

Advanced Manufacturing

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Part 1: Information

Module title: Advanced Manufacturing

Module code: UFMF74-15-M

Level: Level 7

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: 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: The module aims to provide students with in-depth knowledge about advanced manufacturing technologies. In addition, it deliberates the importance of technological developments and automation in sustaining competitive advantages in an increasingly fast-moving business environment. The module also

focuses on the importance of the integration of product design, manufacturing system design and manufacturing technology selection.

Outline syllabus: The module will cover the following areas:

Traditional and new innovative manufacturing processes and assembly techniques used in the aerospace industry and other developing industrial sectors.

Design for manufacture, assembly, maintenance and minimum cost whilst meeting customer requirements.

The influence of composite materials and other advanced materials on manufacturing technology and manufacturing processes.

The structure, strengths and limitations of manufacturing philosophies and approaches.

Relationship between business strategy and manufacturing system.

Organisation of manufacturing and production facilities.

Tools and techniques for optimising manufacturing efficiency and quality.

Part 3: Teaching and learning methods

Teaching and learning methods: See Syllabus and Assessment.

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

MO1 Explain the importance of technological developments and automation in generating and maintaining competitive advantage in the World marketplace

MO2 Evaluate the effectiveness of a choice of manufacturing approach or systems in terms of the profitability of an organisation and its business priorities

MO3 Implement systems level thinking concerning the integration of product design, manufacturing system design and manufacturing technology selection

MO4 Evaluate traditional and new innovative manufacturing processes and assembly techniques used in industry

MO5 Identify suitable manufacturing technology and techniques for the production of specified components and appraise each technique in terms of manufacturing efficiency and quality

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 115 hours

Face-to-face learning = 35 hours

Total = 150

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/ufmf74-15-m.html>

Part 4: Assessment

Assessment strategy: The single assessment will be a project assignment which requires demonstration of independent learning of theory and critical reflection of the project work both in the classroom and during the assignment period outside the classroom. A mix of general and individual written feedback will be provided. The output from the project will be a 3000 word report.

The resit assessment will involve a reworking of the first sit report.

Assessment tasks:

Project (First Sit)

Description: Project (3000 words)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

Project (Resit)

Description: Project (3000 words)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Aerospace Engineering (Manufacturing) [Sep][FT][Frenchay][4yrs] - Not Running
MEng 2020-21

Aerospace Engineering with Pilot Studies (Manufacturing) [Sep][FT][Frenchay][4yrs]
- Not Running MEng 2020-21

Aerospace Engineering (Manufacturing) [Sep][SW][Frenchay][5yrs] MEng 2019-20

Aerospace Engineering with Pilot Studies (Manufacturing) [Sep][SW][Frenchay][5yrs]
MEng 2019-20

Engineering Management [GCET] MSc 2023-24

Engineering Management [Frenchay] MSc 2023-24

Engineering Management [Frenchay] MSc 2023-24

Engineering Management [GCET] MSc 2023-24

Engineering Management [Frenchay] MSc 2022-23

Engineering Management [GCET] MSc 2022-23

Aerospace Engineering [Sep][FT][Frenchay][4yrs] MEng 2020-21

Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][4yrs] MEng 2020-21

Aerospace Engineering [Sep][FT][Frenchay][4yrs] - Not Running MEng 2020-21

Aerospace Engineering with Pilot Studies [Sep][FT][Frenchay][4yrs] - Not Running
MEng 2020-21

Aerospace Engineering [Sep][SW][Frenchay][5yrs] MEng 2019-20

Aerospace Engineering with Pilot Studies [Sep][SW][Frenchay][5yrs] MEng 2019-20