



Module Specification

Advanced Manufacturing

Version: 2026-27, v3.0, Approved

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Part 1: Information

Module title: Advanced Manufacturing

Module code: UFMF74-15-M

Level: Level 7

For implementation from: 2026-27

UWE credit rating: 15

ECTS credit rating: 7.5

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: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module delivers in-depth insight into advanced manufacturing technologies and their critical role in sustaining competitive advantage through automation and innovation. Students gain an integrated understanding of product design, manufacturing system design, and technology selection, equipping them with essential skills for modern aerospace and engineering industries.

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: Topics are likely to include but are not limited to:

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: The teaching and learning method of this module will be combining lectures and tutorials to introduce and convey key concepts of advanced manufacturing methods and through-life engineering services. The content of the module will be consolidated by tutorial discussions and report.

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

MO1 Explain and evaluate the role of technological developments, automation, and manufacturing approaches in achieving competitive advantage and organisational profitability.

MO2 Apply systems-level thinking to integrate product design, manufacturing system design, and technology selection for efficient production.

MO3 Assess and select appropriate traditional and innovative manufacturing processes and techniques for specified components, considering efficiency, quality, and industry standards.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 115 hours

Staff-guided learning = 35 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/index.html) via the following link <https://uwe.rl.talis.com/index.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

Project (Resit)

Description: Project (3000 words)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Aerospace Engineering (Manufacturing) [Sep][PT][Frenchay][8yrs] MEng 2019-20

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2023-24

Aerospace Engineering [Frenchay] MEng 2023-24

Aerospace Engineering [Frenchay] MEng 2023-24

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2023-24

Engineering Management [GCET] MSc 2025-26

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

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2023-24

Aerospace Engineering [Frenchay] MEng 2022-23

Aerospace Engineering [Frenchay] MEng 2023-24

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

Aerospace Engineering [Frenchay] MEng 2022-23

Engineering Management [Frenchay] MSc 2026-27

Engineering Management [GCET] MSc 2026-27

Engineering Management [GCET] MSc 2026-27

Engineering Management [GCET] MSc 2025-26

Aerospace Engineering with Pilot Studies [Frenchay] MEng 2023-24

Aerospace Engineering [Frenchay] MEng 2023-24

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] MEng 2021-22

Aerospace Engineering with Pilot Studies {Foundation} [Frenchay] MEng 2021-22

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

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

Aerospace Engineering [Sep][PT][Frenchay][8yrs] MEng 2019-20

Aerospace Engineering [Frenchay] MEng 2022-23

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