



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Advanced Manufacturing Technology		
Module Code	UFMFYS-15-3	Level	Level 6
For implementation from	2022-23		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	
Department	FET Dept of Engin Design & Mathematics		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Overview:</b> The modern manufacturing environment employs a spectrum of technologies, tools and systems to produce contemporary products. This module provides practitioner with a concise overview of such technologies and systems. Which range from highly advanced CNCs to manufacturing robots and the lean operation systems to management them. The module then guides appropriate technology and system selection, along with knowledge of programming and computational tools to produce a product on multi axis machines.</p> <p><b>Educational Aims:</b> The aim of this module is to enable students to understand the tools, concepts and practices employed by modern manufacturing organisations to satisfy customer requirements.</p> <p><b>Outline Syllabus:</b> The focus will be on the following topics:</p> <p>Advanced Manufacturing Systems</p> <p>Introduction to the trends, legislation and regulations governing global manufacturing sectors such as automotive.</p> <p>Introduction to automotive manufacturing strategies such as the Toyota Production System.</p>

## STUDENT AND ACADEMIC SERVICES

Implementation of batch vs flow manufacture.  
 Process management, measurement and control, Six Sigma.  
 Planning and control of production, scheduling techniques.

Advanced Manufacturing Technologies

CAD/CAM/CAE  
 Flexible manufacturing systems  
 Rapid prototyping and time compression technologies

**Teaching and Learning Methods:** Scheduled learning: material will be delivered in whole cohort sessions and via on-line resources. The majority of the learning activities will take place on a combination of lectures, discussion groups, case studies and 'hands on' use of tools and techniques that provide exposure to contemporary advanced manufacturing, its systems and technologies.

Independent learning: includes hours engaged with essential reading, assignment preparation and completion etc.

### Part 3: Assessment

The module will be assessed in two components.

Component A consists of a one hour in-class examination at the end of the module.

Component B consists of an individual technical report (2000 words) assessing the application of computer aided tools and techniques to provide a manufacturing solution.

Additionally, there will be opportunities for formative assessment (which does not contribute to the module mark. For example, you may be asked to give a presentation, or to compete against other group's work to assess its relative performance.

Feedback will be given on your work each week in the lab sessions.

The resit assessment will have same profile as the 1st assessment.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		50 %	Individual assignment (2000 words)
In-class test - Component A	✓	50 %	1 hour in-class test
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		50 %	Individual assignment (2000 words)
Examination - Component A	✓	50 %	1 hour written test

### Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	<b>Module Learning Outcomes</b>	<b>Reference</b>

## STUDENT AND ACADEMIC SERVICES

	Apply knowledge and understanding of the principles of advanced manufacturing systems management	MO1
	Develop a detailed set of production requirements using market trends, legislation and regulations governing global manufacturing industries.	MO2
	Justify Lean strategies and their deployment	MO3
	Formulate strategies to enhance engineering design and manufacture for industries (such as automotive engineering)	MO4
	Select CAD/CAM/CAE tools and technologies to generate and manufacture a component on a 3 Axis machine centre.	MO5
Contact Hours	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	114
	<b>Total Independent Study Hours:</b>	114
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	36
	<b>Total Scheduled Learning and Teaching Hours:</b>	36
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
	Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://rl.talis.com/3/uwe/lists/8831504A-DDC5-ACD8-0355-7309EF025A84.html?lang=en-gb&amp;login=1">https://rl.talis.com/3/uwe/lists/8831504A-DDC5-ACD8-0355-7309EF025A84.html?lang=en-gb&amp;login=1</a></p>

### Part 5: Contributes Towards

This module contributes towards the following programmes of study: