MODULE SPECIFICATION

Part 1: Information			
Module Title	Manufacturing Technology		
Module Code	UFMFP7-15-2	Level	Level 5
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Module type:	Standard		

Pre-requisites	Design, Materials and Manufacturing 2019-20
Excluded Combinations	None
Co- requisites	None
Module Entry requirements	None

Part 2: Description

Educational Aims: See Learning Outcomes

Outline Syllabus: Advanced manufacturing process, such as:

Additive Layer Manufacture (ALM),
Waterjet cutting/ profiling,
Nano and micro machining, and
Laser machining.

Modern methods to inspect precision machined engineering components:

Technologies and tools
Uncertainties in measurement

Computer Numerical Control (CNC):

Machine tool layout and construction, and
Manual part programming.

Computer Aided Manufacture (CAM):

Application,
Manufacturing feature recognition, and
Industrial software.

Fixed and Flexible automation:

Configurations,
End effectors,
Drive systems,
Programming methods and,
Basic industrial applications.

Teaching and Learning Methods: Students will be exposed to up to date applications from manufacturing industries, to ensure that they have full appreciation and understanding of modern manufacturing technologies.

Part 3: Assessment

The main sit strategy will be as follows:

Component A: The examination is summative and assesses the students' understanding of concepts, manufacturing methods and techniques, and their ability to apply them to a variety of industrial scenarios.

Component B: The DEWIS test is intended to encourage early engagement with the module and to provide timely feedback to help identify strengths and weaknesses related to knowledge of manufacturing processes. The written report is structured to verify students' competence and demonstrate understanding of a range of manufacturing technologies and computer numerical controlled (CNC) systems. Requiring the students to demonstrate an ability to apply this knowledge in a realistic and representative format for a production engineer producing a component on a CNC lathe.

The resit strategy will be as follows:

Component A: The examination assesses the students' understanding of concepts, manufacturing methods and techniques, and their ability to apply them to a variety of industrial scenarios.

Component B: The written report is structured to verify students' competence and demonstrate understanding of a range of manufacturing technologies and computer numerical controlled systems. Requiring the students to demonstrate an ability to apply this knowledge in a realistic and representative format for a production engineer producing a component on a CNC lathe. In addition the student will be required to select pre and post processing manufacturing technologies for a given component. Risk of plagiarism will be mitigated by the individualised variables and data being issues to students with the assignment brief.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		40 %	2000 word individual report and cnc program
In-class test - Component B		10 %	Dewis test
Examination - Component A	✓	50 %	2 hour examination
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		50 %	2000 word individual report and cnc program
Examination - Component A	✓	50 %	2 hour examination

Part 4: Teaching and Learning Methods

Learning Outcomes

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

Module Learning Outcomes	Reference
Explain and apply the principles of a range of modern manufacturing technologies.	MO1
Comparatively analyse and evaluate the benefits of modern manufacturing processes and discuss their limitations.	MO2
Evaluate, critically analyse manufacturing processes to maximise value-add and equipment/manpower utilization	MO3
Evaluate design, automation and metrology in modern manufacturing processes.	MO4
Demonstrate the application of advanced CAM to undertake 3-axis CNC machining operations.	MO5

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	114
Total Independent Study Hours:	114
Scheduled Learning and Teaching Hours:	
Face-to-face learning	36
Total Scheduled Learning and Teaching Hours:	36
Hours to be allocated	150
Allocated Hours	150

Reading List

The reading list for this module can be accessed via the following link:

https://uwe.rl.talis.com/index.html

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Mechanical Engineering with Manufacturing {Apprenticeship} [Sep][PT][Frenchay][4yrs] BEng (Hons) 2018-19

Mechanical Engineering with Manufacturing [Sep][PT][Frenchay][4yrs] BEng (Hons) 2018-19

Mechanical Engineering with Manufacturing {Apprenticeship} [Sep][PT][UCW][4yrs] BEng (Hons) 2018-19

Mechanical Engineering with Manufacturing {Apprenticeship} [Sep][PT][COBC][4yrs] BEng (Hons) 2018-19

Mechanical Engineering with Manufacturing {Apprenticeship} [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19