



MODULE SPECIFICATION

Part 1: Information			
Module Title	Automotive Manufacturing		
Module Code	UFMFNC-30-3	Level	Level 6
For implementation from	2019-20		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Module type:	Standard		
Pre-requisites	Automotive Technology 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: The syllabus includes:</p> <p>Automotive Manufacturing: Structure of metallic materials, structure of composite materials, joining technology; manufacturing processes and assembly techniques; design for manufacture; design for assembly; material technology selection; manufacturing process technology selection; sustainability in materials and manufacturing.</p> <p>Advanced Manufacturing Technologies: Process management, measurement and control, Six sigma, Planning and control of production, scheduling techniques, managing manufacturing systems, MRP MRPII and ERP, batch v flow manufacture, flexible manufacturing systems, lean and agile manufacture, continuous improvement, introduction to supply chain management.</p> <p>Automotive Legislation Regulations and Industry: “Automotive safety; crash avoidance, driver assistance, crashworthiness, post crash survivability, pedestrian safety, NCAP ratings, Sustainable car industry; energy options, technologies,</p>

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products, issues and policies. Automotive Emission standards, constituents and sources of emissions, measurement and instrumentation of emissions. Automotive manufacturing structure, OEM, suppliers, tier system, manufacturers, Globalisation and global trends”.

Teaching and Learning Methods: Scheduled learning lectures will introduce the general theoretical concepts and present examples in the use of these techniques. Laboratory sessions will be used to underpin and integrate the key theoretical concepts. Some simulation software may be used to complement and help understand the application concepts.

Independent learning In addition to the scheduled learning, students are expected to spend time engaged with essential reading, report preparation and studying the concepts and underlying principles.

Contact Hours:

Scheduled teaching hours will take the form of
Lectures for the whole group
Laboratory demonstration/ tutorials classes for small groups
A project on a given topic

Activity:

Contact time (lectures, tutorials and laboratory): 72 hours
Assimilation and development of knowledge: 150 hours
Coursework/report preparation: 56 hours
Presentation preparation: 22 hours
Total: 300 hours

Part 3: Assessment

Assessed at the end of the module on the basis of an industrially based group project report and files, presentation, oral examination and evidence of individual effort (personal log books) 100%.

The assessment will take into account both the professional practise demonstrated in the management of the projects and outcomes of the projects themselves.

The resit will comprise an individual assignment, report, presentation and oral examination.

First Sit Components	Final Assessment	Element weighting	Description
Final Project - Component A	✓	100 %	Project Report, presentation and oral examination
Resit Components	Final Assessment	Element weighting	Description
Final Project - Component A	✓	100 %	Report, presentation and oral examination

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Part 4: Teaching and Learning Methods																					
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;">Module Learning Outcomes</th> <th style="text-align: left;">Reference</th> </tr> </thead> <tbody> <tr> <td>Subject specific skills in with respect to the principles of process measurement, management and control</td> <td>MO1</td> </tr> <tr> <td>A detailed knowledge and understanding of the principles of manufacturing systems management in the context of automotive engineering</td> <td>MO2</td> </tr> <tr> <td>The principles of metallic and composite materials, manufacturing process technologies and assembly techniques</td> <td>MO3</td> </tr> <tr> <td>The principles of design for manufacturing and design for assembly</td> <td>MO4</td> </tr> <tr> <td>Modelling and simplifying real problems, applying fundamental principles of mechanical engineering to the analysis of realistic problems and making recommendations based on analysis</td> <td>MO5</td> </tr> <tr> <td>Modelling situations and providing solutions to problems using engineering principles. Interpreting experimental data</td> <td>MO6</td> </tr> <tr> <td>Problem formulation and decision making</td> <td>MO7</td> </tr> <tr> <td>Progression to independent learning</td> <td>MO8</td> </tr> <tr> <td>A thorough understanding of the trends, legislation and regulations governing the automotive industry</td> <td>MO9</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Subject specific skills in with respect to the principles of process measurement, management and control	MO1	A detailed knowledge and understanding of the principles of manufacturing systems management in the context of automotive engineering	MO2	The principles of metallic and composite materials, manufacturing process technologies and assembly techniques	MO3	The principles of design for manufacturing and design for assembly	MO4	Modelling and simplifying real problems, applying fundamental principles of mechanical engineering to the analysis of realistic problems and making recommendations based on analysis	MO5	Modelling situations and providing solutions to problems using engineering principles. Interpreting experimental data	MO6	Problem formulation and decision making	MO7	Progression to independent learning	MO8	A thorough understanding of the trends, legislation and regulations governing the automotive industry	MO9
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Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/modules/ufmfnc-30-3.html</p>																				

Part 5: Contributes Towards
This module contributes towards the following programmes of study: