



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Lean Factory Design		
Module Code	UFMFTB-15-3	Level	Level 6
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	Quality Control Systems 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> The aim of this module is to familiarise students with the principles and tools and techniques for modern smart manufacturing facility design and continued improvement.</p> <p><b>Outline Syllabus:</b> Assembly layout, cells and line and balancing.</p> <p>Process considerations while employing design for manufacture and assembly.</p> <p>Design for Changeover and changeover reduction.</p> <p>Value stream economics - what to make where.</p> <p>Application of machine-material interaction evaluation, for process efficacy and efficiency.</p> <p>Modelling and simulation to support process design and layout.</p> <p>Developing the lean supply chain, collaboration and lean logistics.</p> <p>Implementation of Industry 4.0 and the Internet of Things in modern production facilities.</p> <p><b>Teaching and Learning Methods:</b> See Learning Outcomes</p>

## STUDENT AND ACADEMIC SERVICES

### Part 3: Assessment

The main sit strategy will be as follows:

Component A: The examination is summative and assesses the students' understanding of concepts, methods and techniques implemented in the modern Smart factory.

Component B: The portfolio is structured to verify students' competence and demonstrate their applied understanding of approaches to support the development and planning of a lean, smart production facility. This will be based around an industrial scenario.

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Component B: The portfolio is structured to verify students' competence and demonstrate their applied understanding of approaches to support the development and planning of a lean, smart production facility. This will be based around an industrial scenario. (Previously completed coursework will not be included).

Risk of plagiarism in component B 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
Portfolio - Component B		40 %	Portfolio - 2000 word written report, factory design plans and auditing docs
Examination - Component A	✓	60 %	2 hour examination
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Examination - Component A	✓	60 %	2 hour examination

STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>																	
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;"><b>Module Learning Outcomes</b></th> <th style="text-align: left;"><b>Reference</b></th> </tr> </thead> <tbody> <tr> <td>Appraise manufacturing specific skills with respect to the principles of process measurement, management and control</td> <td>MO1</td> </tr> <tr> <td>Demonstrate a detailed knowledge of the Implementation of the agile principles and data exchange technologies for manufacturing systems management</td> <td>MO2</td> </tr> <tr> <td>Model situations and provide solutions to manufacturing problems using engineering principles</td> <td>MO3</td> </tr> <tr> <td>Apply continuous process improvement and problem solving strategies for the modern 'SMART' factory</td> <td>MO4</td> </tr> <tr> <td>Critically appraise justifications for Lean strategies and deployment</td> <td>MO5</td> </tr> </tbody> </table>	<b>Module Learning Outcomes</b>	<b>Reference</b>	Appraise manufacturing specific skills with respect to the principles of process measurement, management and control	MO1	Demonstrate a detailed knowledge of the Implementation of the agile principles and data exchange technologies for manufacturing systems management	MO2	Model situations and provide solutions to manufacturing problems using engineering principles	MO3	Apply continuous process improvement and problem solving strategies for the modern 'SMART' factory	MO4	Critically appraise justifications for Lean strategies and deployment	MO5				
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>																

<b>Part 5: Contributes Towards</b>
This module contributes towards the following programmes of study: