



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Reliability Engineering and Asset Management		
Module Code	UFMFPB-15-3	Level	Level 6
For implementation from	2018-19		
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		
Contributes towards			
Module type:	Standard		
Pre-requisites	Mathematics for Manufacturing 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> This module will provide a professional-level working knowledge of the advanced techniques of reliability engineering and an ability to apply them to improving the maintenance, the maintainability of existing and proposed manufacturing plant in their workplace.</p> <p><b>Outline Syllabus:</b> The module includes:</p> <p>Reliability data analysis: types and sources of reliability data, data collection, data cleansing, data accuracy and precision, model fitting, big-data, incomplete data, redundant data, not-detailed data</p> <p>Applications of statistical simulation in system reliability and availability modelling</p> <p>Maintenance modelling, planning, scheduling, and optimisation</p> <p>Probability of failure, Cost of failure, and risk of failure in specific manufacturing systems</p>

## STUDENT AND ACADEMIC SERVICES

System's life-cycle: Life-cycle cost (LCC) analysis, identification of key cost drivers

**Teaching and Learning Methods:** See educational aims and assessment.

### Part 3: Assessment

The main sit strategy will be as follows:

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

Component B: The technical report will take into account both the professional practise demonstrated in the management of the projects and assessment of system reliability applied to a production system scenario. The technical report will take the form of a consultancy document to an industrial client proposing reliability problem mitigation for their production system.

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

Component B: Will provide the individual student with the opportunity to rework the written assignment, or where this is the first attempt a different industrial scenario shall be provided. Risk of plagiarism with Component B will be mitigated by the individualised variables and data for the industrial scenario being issues to students with the assignment brief.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		30 %	2000 word (individual) technical report
Examination - Component A	✓	70 %	2 hours examination
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		30 %	2000 word (individual) technical report
Examination - Component A	✓	70 %	2 hour examination

### Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will be able to:	
		<b>Module Learning Outcomes</b>
	MO1	Collect and analyse manufacturing plant data to facilitate the diagnosis and elimination of reliability problems
	MO2	Select and apply the most appropriate techniques for reliability assessment
	MO3	Demonstrate an in-depth appreciation of the contribution of reliability and asset management techniques to competitiveness of a manufacturing enterprise

STUDENT AND ACADEMIC SERVICES

	MO4	Analyse quality problems and apply suitable techniques to improve product quality
Contact Hours	<b>Contact Hours</b>	
	<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>The reading list for this module can be accessed via the following link:</p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>	