



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Systems Engineering		
Module Code	UFMFSA-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	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Overview:</b> With the increasing complexity of systems formalised approaches to system development are required to ensure compliance with Stakeholder needs. The module is intended to prepare the student for multi-disciplinary projects and the complexity they will encounter as they enter the aerospace sector as graduates.</p> <p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> See educational aims and teaching and learning methods.</p> <p><b>Teaching and Learning Methods:</b> Large group lecture supported by small group tutorial sessions. Study time outside of contact hours will be spent on private study, on project work and team interactions.</p> <p>Scheduled learning includes lectures, tutorials and project work.</p> <p>Independent learning includes hours engaged with essential reading, assignment preparation team interaction, analysis, completion.</p> <p>Contact Hours:</p>

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Contact: 36 hours
Assimilation and skill development: 36 hours
Coursework: 36 hours
Exam preparation: 42 hours
Total: 150 hours

### Part 3: Assessment

Component A:  
Assessed via an end of semester Exam (2 hours) to assess the student's understanding of the concepts, techniques and outcomes.

Component B: Dynamics  
Assessed via a portfolio of project work undertaken by the student working alone and/or in teams.

First Sit Components	Final Assessment	Element weighting	Description
Portfolio - Component B		50 %	Assessment of student portfolios
Examination - Component A	✓	50 %	Examination
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Written report
Examination - Component A	✓	50 %	Examination

### 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>
	Show understanding of the differences between a Systems Engineering approach and a non-systems approach to systems design	MO1
	Show a knowledge and understanding of key principles of Requirements driven design	MO2
	Show and understanding of how system interaction leads to emergent properties that may enhance or degrade the containing system's performance	MO3
	Recognise and explain the need for a team approach to system design	MO4
	Develop and knowledge and understanding of a range of decision support tools to inform system design	MO5
	Apply knowledge of identifying customers/stakeholders, eliciting Requirements and translating these into specific, precise and measurable technical Requirements	MO6
	Develop an understanding of the role of modelling in Requirements determination and system design	MO7
Develop an understanding of Trade Studies and the need for robust optimisation of design options	MO8	

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	Apply knowledge and experience to investigate and solve problems in system design	MO9
	Show cognitive skills with respect to modelling and simplifying real problems, and applying analytical methods	MO10
	Demonstrate key transferable skills in problem formulation and decision making, evaluating alternate courses of action	MO11
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>The reading list for this module can be accessed via the following link:</p> <p><a href="https://uwe.rl.talis.com/modules/ufmfsa-15-3.html">https://uwe.rl.talis.com/modules/ufmfsa-15-3.html</a></p>	

### Part 5: Contributes Towards

This module contributes towards the following programmes of study: