MODULE SPECIFICATION

Part 1: Information			
Module Title	Platform and Major Systems		
Module Code	UFMFRH-15-M	Level	Level 7
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:	Project		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: The module aims to provide an advanced study of the major aircraft systems and their interactions when combined within an aircraft platform.

Outline Syllabus: The syllabus includes:

Introduction: The properties, technologies, applications, and development processes that differentiate aircraft systems.

Systems: The variety of systems that exist within an aircraft, their individual functions and required properties, and the interactions between them that is required to control the aircraft.

Architectures: Currently available system platform architectures, their advantages and disadvantages in terms of design, operation, suitability, maintenance and life cycle. The likely evolution of such architectures in the future.

Hardware: The challenges and solutions associated with creating reliable hardware components

and subsystems capable of surviving in hostile airborne environments.

Software: The challenges and solutions associated with creating reliable, trustworthy and robust software for safety-critical avionics applications.

Data Communications: The properties of various specialist data-transmission standards available for integration of avionics units, their advantages and disadvantages.

Analysis: The tools and techniques available for systematic capturing, abstracting and analysis of the combined behaviour of interacting systems at a platform level.

Modelling: The use of tools and techniques available for creation of dynamic system models.

Testing: The use of tools and techniques available for generating repeatable tests for created dynamic system models.

Teaching and Learning Methods: The module includes presented material and group laboratory project work so that students can experience how multiple complex aircraft systems (including their controlling avionics and sensor/actuator suites) interact.

Part 3: Assessment

The assessment will bring all the concepts together via the case study, which is based on real projects from the organisation.

It consists of a single submission – maximum 4000 words, comprising:

A group report describing and reflecting on the team coursework performed during and outside scheduled contact periods – maximum 2000 words. This element is expected to pick up on the technical details of the project, as per the learning outcomes.

An individual report, reflecting and speculating on the implications of the module content for his/her own experience – maximum 2000 words. This element is expected to focus on the individual's own learning experience, both the technical skills learnt and the team working/business skills required to achieve the project.

This submission will show how well the team worked on the case study to meet the organisation's capability requirements, and providing an individual reflection of the activity for personal career development.

Note: the re-sit submission will consist of an individual reflection. This will be undertaken with respect to a suitable group project report submitted by the rest of the relevant team. It will be a maximum of 4000 words.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component A		50 %	Group project report
Report - Component A	✓	50 %	Individual reflection
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component A	✓	100 %	Individual reflection based on a suitable group project

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will be able to:

	Module Learning Outcomes
MO1	Examine and differentiate the function and configuration of various aircraft system architectures
MO2	Interpret and predict the interactions between multiple asynchronous systems
MO3	Gain an understanding of how system interaction leads to emergent properties that may enhance or degrade a platform's performance
MO4	Manage the interfaces between multiple systems at a communication and functional level
MO5	Show cognitive skills with respect to modelling and simplifying real problems
MO6	Define and develop suitable testing methods for evaluating a system
MO7	Recognise, explain and apply the need for a platform level approach to system design
MO8	Critically evaluate candidate designs for component systems in terms of their platform level implications
MO9	Reflect and comment on the role of modelling and analysis in platform level system design

Contact Hours

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/modules/ufmfrh-15-m.html