MODULE SPECIFICATION

Part 1: Information			
Module Title	Aircraft Systems Integration		
Module Code	UFMFPH-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	Digital Electronic Systems Engineering {Apprenticeship} [Jan][PT][Frenchay][2yrs] MSc 2018-19		
Module type:	Project		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: See learning outcomes.

Outline Syllabus: The module aims to provide an advanced study of how best to perform integration of the various components (hardware and software) of an avionics system. The module includes presented material and group project work based on a case study so that students can experience the issues when integrating multiple complex aircraft components.

What is integration?

The context for integration

Why, when and where do we need it?

Commercial motivation for sound integration (e.g. early discovery of problems)

The cost of bad integration – what can go wrong

Case study

Interface Leadership:

Identifying the interfaces in a system

Internal and external interfaces

Understanding the system context

Defining the information required for an interface

To ensure all parties have a common understanding

To mitigate the risk of misunderstanding

Identifying the risks, and the mitigation plans

Can we mitigate all risk?

What is the change management plan?

Case study

Where are the interfaces?

Hardware-hardware, software-software, hardware-software

Internal interfaces and external interfaces

Case study

Interface definition methods:

Defining interfaces

Formalising interfaces

Case study

Modelling interface:

Static models

Dynamic models

Linked models

Case study

Understanding the supply chain from an integration perspective:

What would integration preparation would you expect from a supplier

What integration preparation would you expect to do for your client

Case study

Safety and integration:

Conforming to safety standards

Case study

Teaching and Learning Methods: See assessment strategy.

Part 3: Assessment
The assessment will bring all the concepts together via the case study, which is based on real projects from the organisation. This will include: Assessing the safety level Generating an integration strategy and plan Identifying the main integration risks and mitigation plans Identifying Deliverables: from suppliers; to the client 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
Reflective Diary - Component A	✓	50 %	Individual reflection
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Reflective Diary - Component A	✓	100 %	Individual reflection based on a suitable group report

Part 4: Teaching and Learning Methods

Learning Outcomes

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

	Module Learning Outcomes
MO1	Explain the integration process and how it fits with the development process, identification of interfaces and risk reduction of integration problems
MO2	Demonstrate an understanding of the various methods available for both modelling and defining interfaces and how they can be applied to a project
MO3	Critically evaluate a proposal for modelling and defining interfaces for the given case study
MO4	Reflect on the impact on integration of any changes in the project and assess the change management plan
MO5	Demonstrate the ability to put integration into the context of the safety requirements for a project and make suitable contributions to any safety assessments
MO6	Provide integration leadership by demonstrating the ability to define an integration strategy and plan, estimate cost and duration, identify risks and create a risk mitigation plan
MO7	Demonstrate an understanding of the supply chain

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/ufmfph-15-m.html