



MODULE SPECIFICATION

Part 1: Information			
Module Title	Group Design and Integration Project		
Module Code	UFMFV8-15-3	Level	Level 6
For implementation from	2021-22		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engineering Design & Mathematics		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description
<p>Overview: The ability to work in multidisciplinary teams is a key attribute and requirement of a professional engineer. Each team will work on a real engineering challenge from industry or research where an understanding of the principles behind mechanical and electronic systems is essential to create innovative solutions.</p> <p>This module also provides an opportunity for students to demonstrate an entrepreneurial mind set with students expected to research the business context and opportunities to commercialise their engineering solution.</p> <p>Educational Aims: In addition to the learning outcomes, students will improve their skills in decision making, team management and broaden their understanding of related disciplines.</p> <p>Outline Syllabus: The successful completion of the project will involve demonstration of the following knowledge or skill.</p> <p>Creating the co-design environment and design management. Use of modelling and coding guidelines. Design verification and formal verification through simulation and testing, test pattern generation.</p>

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Vendor specific issues.
 Testing and validation.
 Use of Intellectual Property (IP) in a co-design context, design for reuse.
 Project Management tools, code maintenance and review.
 Aspects of safety and performance of systems.
 User interface design or user needs and the role of aesthetics.

Teaching and Learning Methods: This module integrates many facets of the students learning in a multi-disciplinary design and development project. A combination of seminars and demonstrations are used to present core topics from the syllabus.

Laboratory sessions are used for team meetings, development work and familiarisation with the specialist software and test equipment.

Laboratory sessions will be the primary time when part-time students can work with full-time student team members.

Scheduled learning includes lectures, seminars, demonstration, practical classes.

Independent learning includes hours engaged with essential reading, further team meetings and laboratory based development work undertaken outside the scheduled classes. Students will be expected to use some of this time to maintain the management tools used as part of the group coursework.

Contact: 36 hours
 Assimilation and skill development: 72 hours
 Undertaking Coursework: 21 hours
 Exam preparation: 21 hours
 Total: 150 hours

Part 3: Assessment

The assessments are designed to strengthen the student's skills in managing a design and development project that requires the integration of both software and hardware components. It develops the student's professional practice in areas which have not been covered in previous modules.

The core assessment is through a team-based design and implementation exercise. It is expected that students will build on project management skills gained at level 2. Students will be required to utilise, and be assessed on, industry standard development tools and code management systems. They must ensure a full audit trail of their design and implementation, including minutes of meetings and code reviews. In the progress review, each individual team member will be assessed as to their understanding of the process and their performance. This will form the controlled assessment.

Teams are provided with clear guidelines which permit the allocation of different marks for each member in the group project along with the potential to sack team members.

Assessments will be conducted in line with the SEEC guidelines for the level in conjunction with the discipline specific outcomes listed above and referenced from the IET Handbook of Learning Outcomes for Accredited Programmes. Where a learning outcome is assessed more than once this is in both an individual and a group context.

Formative assessment will be given in the form of ongoing feedback and guidance during the laboratory sessions.

First Sit Components	Final Assessment	Element weighting	Description
Group work - Component A	✓	25 %	Progress Review

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Group work - Component B		75 %	Group submission of a portfolio that consists of a report and project management documentation (8000 words).
Resit Components	Final Assessment	Element weighting	Description
Presentation - Component A	✓	25 %	Individual Presentation (0.5 hr)
Report - Component B		75 %	Reflective report (2000 words)

Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	Reference
	Select appropriate project management techniques and maintain relevant documentation to support a design and development project. (P11, G2, G3)	MO1
	Integrate knowledge from engineering disciplines and fields outside of engineering to facilitate multidisciplinary project work. (P4, P5, EL4, D2, D3b)	MO2
	Design and justify engineering solutions to an open-ended technical problem using a systems engineering approach. (SM3b, EA2, EA4b, D2, D4, P8)	MO3
	Appraise the commercial opportunities of an engineering solution with reference to intellectual property legislation and relevant industrial standards. (P1, P5)	MO4
	Implement an appropriate verification and validation strategy to ensure project requirements are met and risks are reduced. (D2, EL6)	MO5
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	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/modules/ufmfv8-15-3.html</p>	

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Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Electronic Engineering {Apprenticeship} {Top-Up} [Sep][PT][Frenchay][2yrs] BEng (Hons) 2020-21

Electronic and Computer Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2019-20

Automation and Robotics Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2018-19

Automation and Robotics Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2018-19

Electrical and Electronic Engineering [Sep][SW][Northshore][5yrs] MEng 2018-19

Instrumentation and Control Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2018-19

Electrical and Electronic Engineering [Sep][SW][Frenchay][5yrs] MEng 2018-19

Instrumentation and Control Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2018-19

Electronic and Computer Engineering [Sep][PT][GlosColl][5yrs] BEng (Hons) 2019-20

Electronic and Computer Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2019-20

Electronic Engineering [Sep][FT][Frenchay][4yrs] MEng 2019-20

Electronic Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2019-20

Electronic Engineering [Sep][SW][Frenchay][5yrs] MEng 2018-19

Electronics and Telecommunication Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2018-19

Electronics and Telecommunication Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2018-19

Electronic Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19

Electronic Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2018-19

Electronic Engineering [Sep][PT][GlosColl][5yrs] BEng (Hons) 2018-19