Module Title:	Project 1 (Avionic)
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	2 programme(s)

Teaching & Learning Strategies:	The following tools shall be used to teach this module • Practical project assignments designed using project based learning techniques • Circuit design using cookbooks and test tutorial sessions • Electronic and mechanical workshop sessions

Module Aim:	To give students the knowledge, competencies and design skills necessary to develop a systems approach to projects.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Evaluate suitable circuits for a project and generate component lists, sourcing equivalents if required.
LO2	Construct each individual circuit and using standard test equipment, determine whether the circuit meets with the project specification.
LO3	Design electronic circuit board layouts and complete all aspects of electronic and mechanical assembly.
LO4	Identify the associated safety risks when working with workshop equipment and hand soldering tools.

Pre-requisite learning	
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*	
No recommendations listed	
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*	
No requirements listed	

Module Content & Assessment

Indicative Content
Block diagram for simple digital systems Block diagram using top down approach based on a project brief.
Basic digital design / circuit cookbook Research and design of suitable circuits for each individual block. Draft circuits for each design stage and compile component lists, sourcing equivalents where necessary.
Drafting methods Use of C.A.D. software for drafting and simulating electronic circuit schematics.
Stripboard layout Electronic board layout design showing the location of the components on the stripboard.
Mechanical and Electronic Assembly Proper use of soldering and mechanical workshop tools to complete mechanical and electronics assembly.
Testing digital circuits Writing of a specification for each individual block. Breadboarding of each individual circuit. Use of standard test equipment including logic pulsers, probes and oscilloscopes to determine if the circuit design meets specification.
Final report and project logbook Report writing. Discussion of ethical issues in relation the design and construction for the project.
Safety Procedures for ensuring personal safety in a workshop setting and working with static sensitive components.

Assessment Breakdown	%
Project	80.00%
Practical	20.00%

No Continuous Assessment

Project				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	Each student shall complete a project that requires a combination of electrical testing, mechanical and electronic design and assembly skills.	1,2,3,4	80.00	n/a

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Students shall be subject to practical skill evaluations relating to their project work.	2,3	20.00	n/a

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Practicals	12 Weeks per Stage	3.00
Independent Learning	15 Weeks per Stage	5.93
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEAER_B	[Bachelor of Engineering (Honours) in Aerospace Engineering](#)	3	Mandatory
CW_EEACS_D	[Bachelor of Engineering in Aircraft Systems](#)	3	Mandatory

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