

Module Title:	Avionics Fundamentals 1
Language of Instruction:	English
Credits:	10
NFQ Level:	6
Module Delivered In	3 programme(s)
Teaching & Learning Strategies:	A series of lectures, tutorials, class-based tasks, and laboratory exercises will be used. The practical sessions will be used to support the theory. The Institute VLE will be used to interactively communicate with students.
Module Aim:	To give students an understanding of the principles of electric circuits. To develop their ability to apply circuit laws to basic electric circuits.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Interpret the fundamentals of electric circuits.
LO2	Describe the basic measurement units and their pre-fixes, used in electrical engineering.
LO3	Perform calculations to permit the analysis of an electrical circuit (AC/DC).
LO4	Work in an electronic laboratory with due regard for his/her safety and that of others.
LO5	Using schematic diagrams, build and test electrical circuits in a laboratory environment.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content
Electron Theory Molecular structure of conductors, semiconductors and insulators.
Static Electricity and Conduction Static electricity and distribution of electrostatic charges; Conduction of electricity in solids, liquids, gases and a vacuum.
Electrical Terminology Electrical terms, their units and factors affecting them.
DC Sources of Electricity Construction and basic chemical action of batteries.
DC Circuits Ohms Law, Kirchhoff's Voltage and Current Laws;
Power Power, work and energy.
Capacitance/Capacitor Operation and function of a capacitor.
AC Theory Properties of Sinusoidal waveforms.
Diodes Diode characteristics, properties and applications.

Assessment Breakdown	%
Continuous Assessment	60.00%
Practical	40.00%

Continuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	Several in-class and/or online assessments.	1,2,3	60.00	Ongoing

No Project

Practical				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Practical Assignments: The student will complete practical assignments during the module and write a report on each assignment. Practical tests: Learners will complete practical tasks for summative assessment.	1,2,3,4,5	40.00	Every Week

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		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	12 Weeks per Stage	5.00
Practicals	12 Weeks per Stage	4.00
Independent Learning	15 Weeks per Stage	9.47
Total Hours		250.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEAER_B	Bachelor of Engineering (Honours) in Aerospace Engineering	1	Mandatory
CW_EEACS_D	Bachelor of Engineering in Aircraft Systems	1	Mandatory
CW_EEPLT_D	Bachelor of Science in Pilot Studies	1	Mandatory