

Module Title:	Aviation Engineering Practice
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	Practicals: A series of demonstrations and practical exercises designed to motivate the interest of the students in learning and developing the necessary skills involved. The practical sessions will also involve video demonstrations of Industry best practice.
Module Aim:	To develop the skills necessary to read and modify assembly drawings, plan and build sheet metal assemblies, carry out repair/ replacement on aircraft structures. Industry standard CAD software will be introduced.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Interpret manufacturer drawings and structure repair manuals.
LO2	Use and maintain common aircraft sheet metal hand tools.
LO3	Produce and edit 3D parts, create drawings of a variety of engineering components using a CAD system.
LO4	Recognise the risks associated when working with workshop equipment when working
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

Aircraft Metals

Metal types – aluminium alloys and sheet steels, plates, extrusions. Corrosion types - removal and protection.

Engineering Drawings and SRM

Metalwork engineering diagrams, Manufacturer drawings and Structure Repair Manuals.

Hand tools

Use and maintenance of common aircraft sheet metal hand tools. Drilling, deburring and countersinking for rivet installation. Reaming for interference, transition and loose fits. Installation of commonly used aircraft fasteners.

Bench and floor tools

Calculation of bend allowances, setback and layout to use a brake press. Use of a Guillotine to cut sheet metal. Formation of sheet metal using rollers.

Aircraft Fasteners

Common types, hole sizes, identification marks. Edge margins, distance and fastener pitch.

Aircraft Repairs

Principles of aircraft repairs, Damage assessment and classification, Stressed skin and structural repairs.

Safety

Risks associated with working with workshop equipment and hand tools. Tool control procedures. Safe working practices when working with sheet metal equipment and hand tools.

Computer Aided Drafting

Introduction to basic CAD concepts. Basic editing and drawing commands. Enhancing CAD drawings with text, symbols and blocks. File management. Introduction to P.D.M. Adding and editing dimensions with different dimensioning styles.

Assessment Breakdown	%
Practical	100.00%

No Continuous Assessment

No Project

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Each student will complete several individual projects to demonstrate their knowledge and skill level of C.A.D., sheet metalwork, aircraft structural repair and electronic assembly.	1,2,3,4	100.00	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		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Practicals	12 Weeks per Stage	4.00
Independent Learning	15 Weeks per Stage	5.13
Total Hours		125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEAER_B	Bachelor of Engineering (Honours) in Aerospace Engineering	2	Mandatory
CW_EEACS_D	Bachelor of Engineering in Aircraft Systems	2	Mandatory