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| 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 |
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| 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 |