

Subject Description Form

Subject Code	AAE2102/IC2133
Subject Title	Aircraft Manufacturing and Maintenance Fundamentals
Credit Value	4 Training Credits
Level	2
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	<p>The subject provides opportunity for students to gain practical and hands- on training experiences in the following fundamental aircraft engineering and maintenance procedures and practices:</p> <ul style="list-style-type: none"> • Safety Precautions, • Use of hand tools and bench fitting, • Engineering Drawing, • Electronic Safety Test and Practice <p>This subject also equips students with basic workshop skills necessary for handling manufacturing project subjects..</p>
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. Demonstrate a practical understanding on the working principle,capability and operation of major aircraft manufacturing processes; and b. Select and use appropriate materials and manufacturing processes for specific parts requirements; and c. Explain the importance of quality, timeliness, regulation conformance,and continuous improvement to aviation engineering.
Subject Synopsis/ Indicative Syllabus	<p>Workshop Safety - Use of fire extinguishers; Use of respirators; Use of fall protection andfall arrest equipment.</p> <p>Use of Hand Tools - Use of Hand Tools in Bench Fitting; Use of Marking out Tool; Use of Measuring Instruments; Use of Hand Tools in Aircraft Maintenance;Torque loading technique; Bench Fitting; Fabrication of a Part.</p> <p>Engineering Drawing - Read and draw orthographic sketches; Read and draw isometric sketches; Read and draw layers, block, attributes; Read and draw sectional view; Read and specify dimensional tolerances; Read and draw treads and fasteners; Draw 3D solid components; Read and draw assemblies; Read and draw electrical circuits and components.</p> <p>Electronic Safety Test and Practice - Avionics General Test Equipment; Soldering.</p>

Learning Methodology	<p>Workshop-based hands-on activities will be used for students to appreciate the principles and operations of common aircraft manufacturing technologies, and to acquire essential practical skills for them to carry out project tasks.</p> <p>On-demand demonstrations and tutorials will be provided to support students having difficulties in their hands-on activities.</p> <p>Technical handouts will be available on-line for students to familiarise with the technical contents.</p>				
Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed		
			a	b	c
	Workshop Assignments	40%	✓	✓	✓
	Quizzes	20%	✓	✓	
	Training report	40%	✓	✓	✓
	Total	100%			
Student Study Effort Expected	Class Contact				
	▪ Hands-on practices	120 Hrs.			
	Other Study Effort	0 Hrs.			
	Total Study Effort	120 Hrs.			
Reading List and References	<ol style="list-style-type: none"> Forenz, T. (2018). Aviation Maintenance Technician Certification Series: Materials and hardware. Module 06. US, Aircraft Technical Book Company. Fietz, K. (2019). Aviation Maintenance Technician Certification Series: Maintenance practices. Module 07A. US, Aircraft Technical Book Company. 				