

MODULE 6 - SYLLABUS

MODULE 6. MATERIALS AND HARDWARE	LEVEL			
	A	B1	B2	B3
6.1 Aircraft Materials — Ferrous				
(a) Characteristics, properties and identification of common alloy steels used in aircraft; Heat treatment and application of alloy steels;	1	2	1	2
(b) Testing of ferrous materials for hardness, tensile strength, fatigue strength and impact resistance.	-	1	1	1
6.2 Aircraft Materials — Non-Ferrous				
(a) Characteristics, properties and identification of common non-ferrous materials used in aircraft; Heat treatment and application of non-ferrous materials;	1	2	1	2
(b) Testing of non-ferrous material for hardness, tensile strength, fatigue strength and impact resistance.	-	1	1	1

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MODULE 6. MATERIALS AND HARDWARE	LEVEL			
	A	B1	B2	B3
6.3 Aircraft Materials - Composite and Non- Metallic				
6.3.1 Composite and non-metallic other than wood and fabric				
(a) Characteristics, properties and identification of common composite and non-metallic materials, other than wood, used in aircraft; Sealant and bonding agents.	1	2	2	2
(b) The detection of defects/deterioration in composite and non-metallic material. Repair of composite and non-metallic material.	1	2	-	2
6.3.2 Wooden structures Construction methods of wooden airframe structures; Characteristics, properties and types of wood and glue used in aeroplanes; Preservation and maintenance of wooden structure; Types of defects in wood material and wooden structures; The detection of defects in wooden structure; Repair of wooden structure.	1	2	-	2
6.3.3 Fabric covering Characteristics, properties and types of fabrics used in aeroplanes; Inspections methods for fabric; Types of defects in fabric; Repair of fabric covering.	1	2	-	2
6.4 Corrosion				
(a) Chemical fundamentals; Formation by, galvanic action process, microbiological, stress;	1	1	1	1
(b) Types of corrosion and their identification; Causes of corrosion; Material types, susceptibility to corrosion.	2	3	2	2
6.5 Fasteners				
6.5.1 Screw threads Screw nomenclature; Thread forms, dimensions and tolerances for standard threads used in aircraft; Measuring screw threads;	2	2	2	2

MODULE 6. MATERIALS AND HARDWARE	LEVEL			
	A	B1	B2	B3
<p>6.5.2 Bolts, studs and screws Bolt types: specification, identification and marking of aircraft bolts, international standards; Nuts: self locking, anchor, standard types; Machine screws: aircraft specifications; Studs: types and uses, insertion and removal; Self tapping screws, dowels.</p>	2	2	2	2
<p>6.5.3 Locking devices Tab and spring washers, locking plates, split pins, palnuts, wire locking, quick release fasteners, keys, circlips, cotter pins.</p>	2	2	2	2
<p>6.5.4 Aircraft rivets Types of solid and blind rivets: specifications and identification, heat treatment.</p>	1	2	1	2
<p>6.6 Pipes and Unions (a) Identification of, and types of rigid and flexible pipes and their connectors used in aircraft; (b) Standard unions for aircraft hydraulic, fuel, oil, pneumatic and air system pipes.</p>	2	2	2	2
<p>6.7 Springs Types of springs, materials, characteristics and applications.</p>	-	2	1	1
<p>6.8 Bearings Purpose of bearings, loads, material, construction; Types of bearings and their application.</p>	1	2	2	1
<p>6.9 Transmissions Gear types and their application; Gear ratios, reduction and multiplication gear systems, driven and driving gears, idler gears, mesh patterns; Belts and pulleys, chains and sprockets.</p>	1	2	2	1
<p>6.10 Control Cables Types of cables; End fittings, turnbuckles and compensation devices; Pulleys and cable system components; Bowden cables; Aircraft flexible control systems.</p>	1	2	1	2
<p>6.11 Electrical Cables and Connectors Cable types, construction and characteristics; High tension and co-axial cables;</p>	1	2	2	2

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Crimping; Connector types, pins, plugs, sockets, insulators, current and voltage rating, coupling, identification codes.				

