

Course code	Course Name	L-T-P - Credits	Year of Introduction
AO307	AIRCRAFT GENERAL ENGINEERING AND MAINTENANCE PRACTICES	3-0-0-3	2016

Prerequisite: Nil

Course Objectives

- To impart the basic concepts of aircraft general engineering and maintenance practices.

Syllabus

Aircraft Weight and Balance - Aircraft station Numbers -Aircraft Hardware- Fluid lines and Fittings- American and British Systems for Identification- Hand Tools- Lay out and Measuring tools - Aircraft metal structure Repair - Inspection Fundamentals- Aircraft logs, Publications, Bulletins, Various Manuals, Type Certificate data sheet-ATA Specifications, Engine Starting Procedures, Piston Turbo Prop and Turbo Jet Engines, Aircraft Fuelling Procedures- Aircraft Tie down, Towing and Taxing of Aircraft, Jacking of Aircraft

Expected Outcome

- The students will gain the concepts of aircraft general engineering and maintenance practices.

Text Books:

- Kroes Watkins Delp, Aircraft Maintenance and Repair, McGraw Hill, New York, 1993.
- Airframe and Power plant Mechanics-General Hand Book-FAA Himalayan Book House,New Delhi.

References:

- Aviation Maintenance Technician Hand Book-Airframe Vol -I and II, FAA, Shroff Publishers & Distributors ,New Delhi.
- Civil Aircraft inspection procedures-CAP 459-Vol.I & II, Sterling Book house, Mumbai.
- Lalit Gupta , Aircraft General Engineering Practices, ,Himalayan Book house, New Delhi

Course Plan

Module	Contents	Hours	End Sem. Exam Marks
I	Aircraft Weight and Balance - Purpose, Theory of Weight and Balance	1	15%
	Terminology - The Datum, C.G, Maximum Weight, Empty Weight, Useful load, Zero fuel weight	1	
	Aircraft weighing procedure - Control Surface Balancing - Rigging checks	2	
	Structural Alignment, Cable tension, Control surface travel - Aircraft Station Numbers	2	
II	Aircraft Hardware-Aircraft Bolts and Nuts, Washers, Aircraft Screws, Control cables, Turn Buckles, Rivets	1	15%
	Fluid lines And Fittings-Flexible Hose, Rubber Hose, Rigid tubes	3	
	Identification of Fluid Lines	2	
	Plumbing Connectors. American and British Systems for Identification.	4	

FIRST INTERNAL EXAMINATION			
III	Hand Tools-Pliers, Wrenches, Torque Wrenches, Snips	2	15%
	Files, Reamers, Drills, Taps and Dies, Screw Drivers	1	
	Lay out and Measuring tools, rules, Combination set	3	
	Precision Instruments-Micrometer, Vernier caliper, Telescopic gauge, Vernier height gauge.	1	
IV	Aircraft metal structure Repair - Riveting, Installation of Rivets, riveting procedure, Rivet Lay out.	2	15%
	Sheet metal Bending, Tube Bending and Flaring - Cable Splicing & Swaging,	2	
	Wire Locking Welding-Oxy Acetylene, Electric Arc Welding	2	
	MIG, TIG, plasma welding	1	
SECOND INTERNAL EXAMINATION			
V	Inspection Fundamentals-, Special Inspections-Hard Landing Inspection	1	20%
	Severe turbulence inspection	1	
	Aircraft logs, Publications, Bulletins	1	
	Various Manuals, Type Certificate data sheet-ATA Specifications	2	
VI	Engine Starting Procedures	2	20%
	Piston Turbo Prop and Turbo Jet Engines	1	
	Aircraft Fuelling Procedures- Aircraft Tie down, Towing and Taxing of Aircraft	1	
	Jacking of Aircraft	2	
END SEMESTER EXAM			

Question Paper Pattern

Maximum marks: 100

Exam duration: 3 hours

The question paper shall consist of three parts

Part A

4 questions uniformly covering modules I and II. Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part B

4 questions uniformly covering modules III and IV. Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part C

6 questions uniformly covering modules V and VI. Each question carries 10 marks
Students will have to answer any four questions out of 6 (4X10 marks =40 marks)

Note: In all parts, each question can have a maximum of four sub questions, if needed.