

AE6010 AIRFRAME MAINTENANCE AND REPAIR

DETAILED SYLLABUS

OBJECTIVES:

- To make the students to understand the Airframe components and the tools used to maintain the components. Defect investigation, methods to carry out investigation and the detailed maintenance and practice procedures.

UNIT I MAINTENANCE OF AIRCRAFT STRUCTURAL COMPONENTS

Equipments used in welding shop and their maintenance - Ensuring quality welds - Welding jigs and fixtures - Soldering and brazing – laser welding. Sheet metal repair and maintenance: Selection of materials; Repair schemes; Fabrication of replacement patches; Tools - power/hand; Repair techniques; Peening - Close tolerance fasteners; Sealing compounds; forming/shaping; Calculation of weight of completed repair; Effect of weight - change on surrounding structure. Sheet metal inspection - N.D.T. Testing. Riveted repair design - Damage investigation - Reverse engineering.

UNIT II PLASTICS AND COMPOSITES IN AIRCRAFT

Review of types of plastics used in airplanes - Maintenance and repair of plastic components – Repair of cracks, holes etc., various repairs schemes - Scopes. Cleaning of fibre reinforced plastic (FRP) materials prior to repair; Break test - Repair Schemes; FRP/honeycomb sandwich materials; laminated FRP structural members and skin panels; Tools/equipment; Vacuum-bag process. Special precautions – Autoclaves

UNIT III AIRCRAFT JACKING, ASSEMBLY AND RIGGING

Airplane jacking and weighing and C.G. Location. Balancing of control surfaces – Inspection maintenance. Helicopter flight controls. Tracking and balancing of main rotor.

UNIT IV REVIEW OF HYDRAULIC AND PNEUMATIC SYSTEM

Trouble shooting and maintenance practices - Service and inspection - Inspection and maintenance of landing gear systems. - Inspection and maintenance of air-conditioning and pressurization system, water and waste system. Installation and maintenance of Instruments - handling - Testing - Inspection. Inspection and maintenance of auxiliary systems - Rain removal system - Position and warning system - Auxiliary Power Units (APUs).

UNIT V SAFETY PRACTICES

Hazardous materials storage and handling, Aircraft furnishing practices - Equipments. Trouble shooting. Theory and practices.

TEXT BOOKS:

1. Kroes, Watkins, Delp, "Aircraft Maintenance and Repair", McGraw Hill, New York, 1992.

REFERENCES:

1. Larry Reithmeir, "Aircraft Repair Manual", Palamar Books, Marquette, 1992.

Diploma, Anna Univ UG & PG Courses

Notes
Syllabus
Question Papers
Results and Many more...

Available @

www.AllAbtEngg.com

2. Brimm D.J. Bogges H.E., "Aircraft Maintenance", Pitman Publishing corp., New York, 1940.
3. Delp. Bent and Mckinely "Aircraft Maintenance Repair", McGraw Hill, New York, 1987.