

AEPC2005 AIRCRAFT MAINTENANCE AND PRACTICE (3-0-0)

Module-1: Maintenance of Aircraft Structural Components (8 HRS)

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.

Module –2: Plastics and Composites in Aircraft(6 HRS)

Review of types of plastics used in airplanes - Maintenance and repair of plastic components - Repair of cracks and holes - 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.

Module –3: Aircraft Jacking, Assembly and Rigging(6 HRS)

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.

Module-4: Review of Hydraulic and Pneumatic System (6 HRS)

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).

Module-5: Safety Practices (4HRS)

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

Textbook:

1. Aircraft Maintenance and Repair. Kroes, Watkins, Delp, Publisher:McGraw Hill, NewYork,1992.
2. Aviation Maintenance Management, Kinnison, H.A., McGraw–Hill–2004.
3. Maintenance and Repair of Aerospace Vehicles,Mc Kinley, J.L., Bent, R.D., Northrop Institute of Technology, Mc Graw Hill, 1967.