

AE6011 AERO ENGINE MAINTENANCE AND REPAIR

DETAILED SYLLABUS

UNIT I PISTON ENGINES

Carburetion and Fuel injection systems for small and large engines - Ignition system components - spark plug detail - Engine operating conditions at various altitudes – Engine power measurements – Classification of engine lubricants and fuels – Induction, Exhaust and cooling system – Maintenance and inspection check to be carried out. Inspection and maintenance and troubleshooting – Inspection of all engine components - Daily and routine checks - Overhaul procedures - Compression testing of cylinders - Special inspection schedules - Engine fuel, control and exhaust systems - Engine mount and super charger - Checks and inspection procedures.

UNIT II PROPELLERS

Propeller theory - operation, construction assembly and installation - Pitch change mechanism- Propeller axially system- Damage and repair criteria - General Inspection procedures - Checks on constant speed propellers - Pitch setting, Propeller Balancing, Blade cuffs, Governor/Propeller operating conditions – Damage and repair criteria.

UNIT III JET ENGINES

Types of jet engines – Fundamental principles – Bearings and seals - Inlets - compressors- turbines- exhaust section – classification and types of lubrication and fuels- Materials used - Details of control, starting around running and operating procedures – Inspection and Maintenance- permissible limits of damage and repair criteria of engine components- internal inspection of engines- compressor washing- field balancing of compressor fans- Component maintenance procedures – Systems maintenance procedures - use of instruments for online maintenance - Special inspection procedures- Foreign Object Damage - Blade damage.

UNIT IV TESTING AND INSPECTION

Symptoms of failure - Fault diagnostics - Case studies of different engine systems – Rectification during testing equipments for overhaul: Tools and equipments requirements for various checks and alignment during overhauling - Tools for inspection - Tools for safety and for visual inspection - Methods and instruments for non-destructive testing techniques - Equipment for replacement of parts and their repair. Engine testing: Engine testing procedures and schedule preparation – Online maintenance.

UNIT V OVERHAULING

Engine Overhaul - Overhaul procedures - Inspections and cleaning of components – Repairs schedules for overhaul - Balancing of Gas turbine components. Trouble Shooting: Procedures for trouble shooting - Condition monitoring of the engine on ground and at altitude - engine health monitoring and corrective methods.

Diploma, Anna Univ UG & PG Courses

Notes
Syllabus
Question Papers
Results and Many more...

Available @

www.AllAbtEngg.com

OBJECTIVES:

- To make the students to familiarize with the Aircraft engine maintenance procedure and practice.
- Must have knowledge of basics of Aeronautics and engine components.

REFERENCES:

1. Kroes & Wild, " Aircraft Power plants ", 7th Edition - McGraw Hill, New York, 1994.
2. Turbomeca, " Gas Turbine Engines ", The English Book Store ", New Delhi, 1993.
3. United Technologies' Pratt & Whitney, "The Aircraft Gas turbine Engine and its Operation", The English Book Store, New Delhi.