AMAEE04 AIRCRAFT SYSTEMS AND INSTRUMENTS

UNIT-1 AIRCRAFT

1.1 Conventional Systems- fully powered flight controls
1.2 Power actuated systems- Modern control systems
1.3 Digital fly by wire systems- Auto pilot system active control Technology,

UNIT-2 AIRCRAFT SYSTEMS

2.1 Hydraulic systems- Study of typical workable system- components
2.2 Pneumatic systems- Advantages- Working principles
2.3 Typical Air pressure system- Brake system
2.4 Typical Pneumatic power system
2.5 Components, Landing Gear systems - Classification

UNIT-3 ENGINE SYSTEMS

3.1 Fuel systems for Piston and jet engines, Components of multi engines.
3.2 Lubricating systems for piston and jet engines
3.3 Starting and Ignition systems - Typical examples for piston and jet engines.

UNIT-4 AUXILIARY SYSTEM

4.1 Basic Air cycle systems- Vapour Cycle systems, Evaporative vapour cycle systems
4.2 Evaporative air cycle systems
4.3 Fire protection systems, deicing and anti-icing systems.

UNIT-5 AIRCRAFT INSTRUMENT

5.1 Flight Instruments and Navigation Instruments
5.2 Gyroscope - Accelerometers, Air speed Indicators
5.3 TAS, EAS- Mach Meters - Altimeters - Principles and operation
5.4 Study of various types of engine instruments – Tachometers
5.5 Temperature gauges - Pressure gauges - Operation and Principles.

References Books:

1. Mekinley, J.L. and Bent, R.D., "Aircraft Power Plants", McGraw-Hill, 1993.
2. Pallet, E.H.J., "Aircraft Instruments & Principles", Pitman & Co., 1993.
3. Treager, S., "Gas Turbine Technology", McGraw-Hill, 1997.