

For Syllabus, Question Papers, Notes & many More

AE6402 AIRCRAFT SYSTEMS AND INSTRUMENTS

DETAILED SYLLABUS

UNIT I AIRCRAFT SYSTEMS

Hydraulic systems – Study of typical workable systems – components – hydraulic systems controllers – modes of operation – pneumatic systems – working principles – typical pneumatic power system – brake system – components, landing gear systems – classification – shock absorbers – retractive mechanism.

UNIT II AIRPLANE CONTROL SYSTEMS

Conventional Systems – power assisted and fully powered flight controls – power actuated systems – engine control systems – push pull rod system – operating principles – modern control systems – digital fly by wire systems – auto pilot system, active control technology

UNIT III ENGINE SYSTEMS

Fuel systems – piston and jet engines – components - multi-engine fuel systems, lubricating systems - piston and jet engines – starting and ignition systems – piston and jet engines

UNIT IV AIRCONDITIONING AND PRESSURIZING SYSTEM

Basic air cycle systems – vapour cycle systems, boot-strap air cycle system – evaporative vapour cycle systems – evaporation air cycle systems – oxygen systems – fire protection systems, deicing and anti icing system.

UNIT V AIRCRAFT INSTRUMENTS

Flight instruments and navigation instruments – accelerometers, air speed indicators – mach meters – altimeters - gyroscopic instruments– principles and operation – study of various types of engine instruments – tachometers – temperature gauges – pressure gauge – operation and principles.

TEXT BOOKS

1. Mekinley, J.L. and R.D. Bent, "Aircraft Power Plants", McGraw Hill 1993.

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2. Pallet, E.H.J, "Aircraft Instruments & Principles", Pitman & Co 1993.

REFERENCES

1. Treager, S., "Gas Turbine Technology", McGraw Hill 1997.

2. Mckinley, J.L. and Bent R.D. "Aircraft Maintenance & Repair", McGraw Hill,1993.

3. Handbooks of Airframe and Power plant Mechanics, US dept. of Transportation, Federal, Aviation Administration, The English Book Store, New Delhi, 1995.

OBJECTIVES

To impart knowledge of the hydraulic and pneumatic systems components and types of instruments and its operation including navigational instruments to the students.