

## **AIRCRAFT ELECTRICAL SYSTEM**

### DETAILED SYLLABUS

#### **OBJECTIVES**

It aims at enabling the students to understand working principles of various aircraft electrical systems.

#### **UNIT- I INTRODUCTION TO AIRCRAFT ELECTRICAL SYSTEM**

Introduction to Aircraft electrical system- Importance of electrical systems in Aircraft- General requirements of the electrical system in aircraft

#### **UNIT- II AIRCRAFT WIRING SYSTEM**

Types of wires used and cables used in aircraft: Explain briefly- Types of cable routing in aircraft: explain importance, reason for correct routing. Method of cable identification: explain methods like colour coding, tags, gauge thickness, printed numbering/name on cable, wiring diagram- Cable termination and screening of cables: explain the importance- Junction box: explain purpose, correct identification- Bonding: explain the need for correct bonding- Insulation testing: Explain the importance, periodicity of insulation testing, consequences of not carrying out this test. Use of megger and bonding tester: brief explanation on the procedure. Static discharger: explain the need for static discharger

#### **UNIT- III POWER DISTRIBUTION AND CONTROL**

Power distribution and control basics- Types of switches- Types of relays, contactors- Types of fuses- Types of circuit breakers- Bus bars, AC and DC power distributor system- Protection circuit, Current Protection, Voltage Protection, Frequency Protection

#### **UNIT- IV POWER CONVERSION EQUIPMENT**

Power conversion equipment: Purpose and usage- Principle of operation Explain briefly- Rectifier-purpose, usage- Static inverter—need, usage, Rotary inverter—purpose, usage- Transformer- purpose- Transformer rectifier unit usage

#### **UNIT- V AIRCRAFT LIGHTING SYSTEM**

Types of lighting – Explain briefly why various types of lighting are required in an aircraft- Cabin lighting- Reading lighting- Cockpit lighting- Luggage cabin lighting- Aircraft landing lights- Aircraft indication lights- Identification rotating beacon: explain the significance

Diploma, Anna University-UG, PG., HSC & SSLC

*Notes*  
*Syllabus*  
*Question Papers*  
*Results and Many more...*

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## **UNIT- VI AIRFIELD LIGHTING SYSTEM**

Need for Air field lighting, purpose occasions for use- Various components of airfield lighting system- General Airport lighting- Taxiway Lights- Runway lights, Runway edge lights, Runway tresh hold lights & runway end lights, Runway exit lights, Runway centre line lights, Precision Approach Path Indicator (PAPI)

### **TEXT BOOKS & REFERENCES**

1. A&P Mechanics general hand book AC 65-9A
2. Aircraft Electrical System- By EHJ Pallet
3. Electrical Technology By BL Theraja (VOLUME I AND VOLUME II)