## PAE3I001 AVIONICS

### OBJECTIVE

To introduce the basic concepts of navigation & communication systems of aircraft.

### UNIT I INTRODUCTION TO AVIONICS

Need for Avionics in civil and military aircraft and space systems – Integrated Avionics system – Typical avionics sub systems – Design approaches and recent advances - Application Technologies.

### UNIT –II FLIGHT DECK AND COMMUNICATION SYSTEMS

Flight deck display technologies – CRT, LED, LCD, Touch screen – Head up display – Electronic instrumentation systems. Aircraft audio systems basic – audio transmitter and receiver principles – VHF communication system – UHF communication systems.

### UNIT III DIGITAL AVIONICS ARCHITECTURE

Avionics system architecture– salient features and applications of Data buses MIL–STD 1553 B– ARINC 429–ARINC 629

### UNIT-IV RANGING AND POSITIONG SYSTEMS

VHF Omni range – VOR receiver principles – distance maturity equipment – principles of operation – Instrument landing system – localizer and glide slope. Global positioning system principles – triangulation – position accuracy – applications in aviation.

### UNIT V AUTO FLIGHT SYSTEM

Automatic flight control systems – fly by wire and fly by light technologies – flight director systems – flight management systems- Utility systems Reliability and maintainability - Certification

### TEXT BOOKS

1. Elements of electronic navigation, N.S.Nagaraja, Tata Mc Graw Hill, 1995.

2. Avionic systems Operation and maintenance, Janes W.Wasson,

Jeppesen Sandersen Training products (Sterling Book House, Mumbai),1994.

### REFERENCES

1. Introduction to Avionics, Dala R. Cundy, Rich S. Brown, Parson

2. Principle of Avionics, Albert Hel frick, Avionics Communications Inc., 2000.

3. Aircraft Instrumentation and Integrated systems EHJ Pallet, Longman Scientific Technical (Sterling Book House, Mumbai) 1996.

4. Aircraft Radio Systems, J.Powell, Pitman publishers, 1998.