

EAS306 Design of Aircraft Electrical Systems and Servomechanisms

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JULY

Synopsis:

The course will provide students with a detailed understanding of aircraft electrical fundamentals and the operational characteristics of variable speed drive systems. He/She will be familiar with the terminology associated with these units, and be able to make an intelligent choice on the most appropriate system for a particular aerospace system application. The course will provide an intermediate/advanced level treatment on the principles of operation and systems configuration / design of aircraft electrical and instrument systems.

Topics:

- Electrical Fundamentals
- Electrical Systems
- Instrument Systems
- Inverters
- DC Motors
- AC Motors

Learning Outcome:

- Distinguish the different types of electrical motors and the related drive units.
- Compare the electrical layout of different classes of aircrafts.
- Appraise the elements of aircraft instrumentation and integration of the system to meet the control, navigational and operational requirements of aircraft.
- Illustrate the terminologies used in aircraft control.
- Demonstrate the effects of external forces on the aircraft control system into control component specifications.
- Apply different subsystems that form the aircraft control system in block diagram form and formulate transfer function of each subsystem.
- Formulate test procedures to evaluate performance of aircraft control system and interpret results.
- Infer the laboratory sessions to physical systems in aircraft and getting feel of actual aircraft systems.
- Interpret case studies with theory learnt and relate relevance of lecture material to systems operational in latest aircrafts.

Assessment Strategies - Regular Semester (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	QUIZ 1	10

Overall Continuous Assessment	LAB REPORT 1	12
	TUTOR-MARKED ASSIGNMENT 1	8
Overall Examinable Components	Written Exam	70
Total		100

*The information listed is subject to review and change.