COURSE CODE	COURSE TITLE	L	T	P	C
1152AE103	Air Transportation and Aircraft Maintenance	3	0	0	3

Course Category:

Program Elective

a. Preamble :

This course deals with the basic concepts in the inspection of Airframe and Aero Engine

b. Prerequisite Courses:

- Aircraft General Engineering and System Maintenance

c. Course Educational Objectives :

Students undergoing this Course are expected

- To learn the maintenance aspect and rectification of snags in Airframe and Aero Engine.
- To impart knowledge on fundamentals of Non Destructive Testing.

d. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Explain the roles of IATA, ICAO	K2
CO2	Describe the Fleet Planning and Fleet Selection process	K2
CO3	Explain the Fleet Scheduling	K2
CO4	Explain the Reliability of Aircraft	K2
CO5	Describe the Technologies in Maintenance	K2

e. Correlation of COs with POs :

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	H		M			H	M	H				H
CO2	H		M			H	M	H				H
CO3	H		M			H	M	H				H
CO4	H		M			H	M	H				H
CO5	H		M			H	M	H				H

H- High; M-Medium; L-Low

UNIT I INTRODUCTION 8

Development of air transportation, comparison with other modes of transport – Role of IATA, ICAO – The general aviation industry airline – Factors affecting general aviation, use of aircraft, airport: airline management and organization – levels of management, functions of management, Principles of organization planning the organization – chart, staff departments & line departments.

UNIT II AIRLINE ECONOMICS & FLEET PLANNING 10

Forecasting – Fleet size, Fleet planning, the aircraft selection process, operating cost, passenger capacity, load factor etc. – Passenger fare and tariffs – Influence of geographical, economic & political factors on routes and route selection.

The aircraft selection process – Fleet commonality, factors affecting choice of fleet, route selection and Capitol acquisition – Valuation & Depreciation – Budgeting, Cost planning – Aircrew evaluation – Route analysis – Aircraft evaluation.

UNIT III PRINCIPLES OF AIRLINES SCHEDULING 10

Equipment maintenance, Flight operations and crew scheduling, Ground operations and facility limitations, equipments and types of schedule – hub & spoke scheduling, advantages / disadvantages & preparing flight plans – Aircraft scheduling in line with aircraft maintenance practices.

UNIT IV AIRCRAFT RELIABILITY 9

Aircraft reliability – The maintenance schedule & its determinations – Condition monitoring maintenance – Extended range operations (EROPS) & ETOPS – Ageing aircraft maintenance production.

UNIT V TECHNOLOGY IN AIRCRAFT MAINTENANCE 8

Airlines scheduling (with reference to engineering) – Product support and spares – Maintenance sharing – Equipments and tools for aircraft maintenance – Aircraft weight control – Budgetary control.On board maintenance systems – Engine monitoring – Turbine engine oil maintenance – Turbine engine vibration monitoring in aircraft – Life usage monitoring – Current capabilities of NDT – Helicopter maintenance – Future of aircraft maintenance.

Total Periods:45

Text Books

1. Fedric J.H., “Airport Management”, 2000.
2. C.H. Friend, “Aircraft Maintenance Management”, 2000.

Reference

1. Gene Kropf, “Airline Procedures”.
2. Wilson & Bryon, “Air Transportation”.
3. Philip Locklin D, “Economics of Transportation”.
4. “Indian Aircraft manual” – DGCA Pub.
5. Alexander T Wells, “Air Transportation”, Wadsworth Publishing Company, California, 1993.