

COURSE CODE	COURSE TITLE	L	T	P	C
1152AE105	AIRCRAFT GENERAL ENGINEERING AND SYSTEM MAINTENANCE	3	0	0	3

Course Category:

Program Elective

a. Preamble :

This course provides a basic maintenance procedure to service systems and ground handling of any aircraft. It also gives the brief knowledge of certificate, Data Sheets and ATA specifications.

b. Prerequisite Courses:

- Aircraft Systems and Instruments

c. Related Courses:

- Aero Engine Maintenance and Structural Repair

d. Course Educational Objectives :

Students undergoing this Course are expected

- To gain knowledge about aircraft maintenance practices and enriches idea about various aircraft sub systems.
- To get details about aircraft safety, maintenance and inspection techniques.

e. 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 ground handling techniques of aircraft	K3
CO2	Explain maintenance procedure and service of various subsystems	K3
CO3	Prepare safety measures and take precautions in workshop.	K1
CO4	Manage inspection documents, data sheets and have knowledge in FAR air worthiness	K2
CO5	Explain Hand Tools and specifications of aircraft hardwares	K2

e. Correlation of COs with POs :

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

H- High; M-Medium; L-Low

f. Course Content :

UNIT I Aircraft Ground Handling and Support Equipment 9

Mooring, jacking, leveling and towing operations – Preparation – Equipment - precautions – Engine starting procedures – Piston engine and Jet engine – Engine fire extinguishing – Ground power units.

UNIT II Servicing of Various Sub Systems 9

Air conditioning and pressurization System Maintenance – Servicing of Oxygen System and oil systems – Ground units and their maintenance.

UNIT III Maintenance of Safety 9

Shop safety – Environmental cleanliness – Precautions.

UNIT IV Inspection 9

Process – Purpose – Types – Inspection intervals – Techniques – Checklist – Special inspection – Publications, bulletins, various manuals – FAR Air worthiness directives – Type certificate Data Sheets – ATA specifications.

UNIT V Aircraft Hardware, Materials, Systems Processes 9

Hand tools – Precision instruments – Special tools and equipment in an airplane maintenance shop – Identification terminology – Specification and correct use of various aircraft hardware (i.e. nuts, bolts, rivets, screws etc.) – American and British systems of specifications – Threads, gears, bearings, etc. – Drills, tapes & reamers. – Identification of all types of fluid line fittings. Materials, metallic and non-metallic - Plumbing Connectors - Cables – Swaging procedures, tests, Advantages of swaging over splicing.

TOTAL: 45 periods

Text Books

1. “Aviation Maintenance Technician Hand Book – General” - Federal Aviation Administration

Reference

1. Kroes Watkins Delp, “Aircraft Maintenance and Repair” – McGraw-Hill, New York 1993.
2. A & P Mechanics, “Aircraft Hand Book” – F. A. A. Himalayan Book House, New Delhi, 1996