

5th Semester	RAE5D001	Aircraft General Engineering & Maintenance	L-T-P 3-0-0	3 CREDITS
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COURSE OUTCOMES

1. Ability to carry out ground servicing of critical aircraft systems
2. Knowledge in specifications standards of aircraft hardware systems.
3. Grasp the ground handling procedures and types of equipments with special maintenance
4. Ability to do shop safety, Environment cleanliness in an aircraft materials shop
5. Understand the FAA airworthiness regulations and the checklist involved in each inspection of aircraft

Module-I AIRCRAFT GROUND HANDLING AND SUPPORT EQUIPMENT 8 Hours

Mooring, jacking, leveling and towing operations – Preparation – Equipment – precautions – Engine starting procedures – Piston engine, turboprops and turbojets – Engine fire extinguishing – Ground power unit.

Module-II GROUND SERVICING OF VARIOUS SUB SYSTEMS 8 Hours

Air conditioning and pressurization – Oxygen and oil systems – Ground units and their maintenance.

Module-III MAINTENANCE AND SAFETY 5 Hours

Shop safety – Environmental cleanliness – Precautions

Module-IV INSPECTION 8 Hours

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

Module-V AIRCRAFT HARDWARE, MATERIALS AND SYSTEM PROCESSES 10 Hours

Hand tools – Precision instruments – Special tools and equipments 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 pacifications – Threads, gears, bearings, etc – Drills, tapes and 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.

Books

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
3. A&P Mechanics, General Hand Book, F A A Himalayan Bok House, New Delhi, 1996

Digital Learning Resources

Course Name: Aircraft Maintenance

Course Link: <https://nptel.ac.in/courses/101/104/101104071/>

Course Instructor: Dr. A.K. Ghosh, IIT Kanpur