

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 3

Aeronautical Engineering

Subject Code 130104

Subject Name Introductions To Profession-Aeronautical Engineering

Sr.No	Course content
1.	Introduction: Introduction to aircraft engineering, introduction to aerodynamics, aircraft structure, aircraft propulsion, avionics.
2.	Fundamentals of Aerodynamics: Introduction of Basic Aerodynamics, review of atmospheric physics (Different regimes of atmosphere), Airfoil nomenclature, elementary aerodynamics (lift, drag, thrust, moments and airfoil stalling), Flight forces and aircraft loading, Fundamentals of stability, Introduction to Flight stability and dynamics.
3.	Introduction of Basic Aerodynamics, review of atmospheric physics (Different regimes of atmosphere), Airfoil nomenclature, elementary aerodynamics (lift, drag, thrust, moments and airfoil stalling), Flight forces and aircraft loading, Fundamentals of stability, Introduction to Flight stability and dynamics.
4.	Fundamentals of Aircraft Structure: Introduction to aircraft structure, Classification of aircraft parts, Basic function of aircraft structure, Aircraft configuration and principle types of construction. Details of constructional features of conventional aircraft. Introduction to Landing gears and types of landing gears
5.	Fundamentals of Propulsion: Introduction, Review of different propulsion systems, Fundamentals of Propulsion, Fundamental gas turbine cycles and Propulsion Techniques (IC Engines and Jet propulsion)
6.	Fundamentals of Avionics: Brief History: Origin of radio, Towards ILS and VOR, Air traffic management and operational facilities: Elements of air traffic management, Operation of an air traffic control centre, Radio telephony communication : Radio telephony, Direction finding, Sighting of directions finders, Short range navigation and approach aids : Introduction to NDB,VOR,DME,ILS,MLS,RADAR: Primary and secondary RADARs, Airborn system: Introduction to inertial and Doppler navigation

Reference Books:

1. Aircraft Engineering Principles by Lloyd Dingle and Mike Tooley, Elsevier Butterworth Heinemann
2. Introduction to Flight by John D Anderson, Jr, McGraw Hill Book Company
3. Flight without Formula by A.C.Kermode
4. Aircraft electrical system by E H Pallet
5. Aircraft Instrument system by E H Pallet
6. Aircraft electrical and electronics by AND Thomos
7. Aircraft structures for Engineering Students: THM Megson, Edward Arnold
8. Mechanics of Aircraft Structures by C.T.Sun