

# GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 4

## Aeronautical Engineering

Subject Code 140103

Subject Name Aircraft Systems And Instruments

Sr.No	Course content
1.	<p>Aircraft Mechanical and Hydraulic Systems:</p> <p>1. Reciprocating Engines- Cycles, fuels and their characteristics, Gas turbines, Constructional features, Aircraft fuel system, Lubrication system, ignition and starting system, , Engine indicating, Warning and control system, Gas turbine instruments, fire warning system, Induction systems, Anti and Deicing system, Air-conditioning and pressurization system, Exhaust system,</p> <p>2. Introduction to A/c hydrolytes and hydraulic systems and operation controls such as undercarriage brakes, steering, and antishimy devices. Hydraulics components and their operating principles such as Hydraulics pumps various selector valves, pressure regulating valves, pressure reducing valves, return valves, accumulators hydraulic operating jacks and other important components. A/c flying controls and their canyon and operation.</p>
2.	<p>Aircraft instrumentation system:</p> <p>1. Instrument panels and layouts: – Quantitative / Qualitative displays – Grouping of equipments on panels – Cockpit panel of an aircraft.</p> <p>2. Flight instrument and systems:- Airspeed, Altimeter, Vertical speed, Angle of attack indicator, Mach-meter, Accelerometer, Heading indicator, Direction gyro., Turn &amp; bank indicator. 3. Flight instrument system: - Pitot tube, Gyro power sources, Air data computer.</p> <p>4. Engine instrument and system: - Tachometer, Oil pressure indicator, Exhaust gas temperature, Engine pressure ratio, Fuel quantity indicator, Fuel pressure, fuel flow meter.</p> <p>5. Auxiliary systems: - Fire protection system, Power sources, Microphones transmission lines, Fibre optic communication, Air conditioning system, On board communication(weather warning system), Black box recorder.</p> <p>6. Flight management system:- Flight management system and data interface, Automatic flight and landing systems – (i) Speed control system (ii) Flight direction system (iii) Flight station equipments.</p>

### Reference Books:

1. Aircraft Instrument System By E H Pallet - Sterling Book House Publication
2. Aircraft Electrical And Electronics By Thomos
3. Airframe And Power Plant Mechanics – General Handbook – Shroff Publishers And Distribution Pvt. Ltd, Navi Mumbai
4. Airframe And Power Plant Mechanics – Power Plant Handbook – Shroff Publishers And Distribution Pvt. Ltd, Navi Mumbai