MODULE 3 ELECTRICAL FUNDAMENTALS – I (In-House Practical)		
Practical	Contents	Hrs
1	Demonstration of Active and Passive components. Identification of Conductors, semiconductors and Insulators	02
2	Measuring (a) Resistances (b) AC and DC Voltages (c) DC Current & checking electrical fuses and connection	04
3	Familiarization with Resistor colour codes - Calculation of resistance value using colour codes	04
4	Familiarization with Potentiometer, rheostat & wheat stone bridges and determine unknown resistance	04
5	Use a Multimeter for measuring Resistance, checking electrical fuses and continuity test	02
6	Identify various types of capacitors and testing of faulty capacitor.	02
7	Demonstration of Permanent Magnet and Electromagnet	02
8	Measure the RMS value, Peak value and average of a sinusoidal voltage and current waveforms.	04
9	Uses of transformer in power distribution	02
10	Familiarization with filters circuit to study the function of low pass, high pass, band pass & band stop	04
	Total Hours =	30

MODULE 7A MAINTENANCE PRACTICES –I (In-House Practical)		
Practical	Contents	Hrs
1	Demonstration of safety precaution while working with- Electricity, gases, oxygen, oils and chemicals.	02
2	Demonstration of fire extinguisher operating procedure.	02
3	Demonstration of tools controlling methods used in aircraft workshop	04
4	Demonstration of simple and precision Measuring and Marking Tools.	06
5	Demonstration of Cutting and Work Holding Tools.	02
6	Filing practice to make square of given dimensions.	04
7	Filing practice to make T fitting of given dimensions	04
8	Demonstration of Striking Tools	02
9	Demonstration of Drilling, Boring and Thread Cutting Tools	02
10	Thread cutting practice using taps.	06
11	Thread cutting practice using dies.	06
12	Practice of butt welding Joint.	04

Hours=		60
	Total	
16	Familiarization with different electrical cables and connectors.	02
15	Practice of corner welding Joint.	04
14	Practice of Lap welding Joint.	04
13	Practice of 'T' welding Joint.	06

MODULE 8 BASIC AERODYNAMICS (In-House Practical)		
Practical	Contents	Hrs
1	Atmospheric layers familiarization on diagrams	02
2	Demonstrations of atmospheric layers Audio/video	02
3	Demonstrations of different types of airfoil used in aviation industry	04
4	Familiarization of turbulent, laminar airflow, stagnant point (audio /video)	04
5	Demonstrations of Study of flow over streamlined bodies with different angle of attack ( audio /video) visualization technique	04
6	Practical demonstrations of center of pressure, stagnation point, profile (parasite) drag, induced drag, angle of attack, wash in and wash out, fineness ratio and aspect ratio – (audio- video)	04
	Total Hours =	20

MODULE 3 ELECTRICAL FUNDAMENTALS – II (In-House Practical)		
Practical	Contents	Hrs
1	Study the methods of Generation of electricity by light, heat, chemical action, magnetism & motion.	04
2	Familiarization with primary and secondary cells.	04
3	Familiarization with Lead acid battery and nickel cadmium battery	04
4	Demonstration of various Battery charging methods	04
5	Familiarization with DC Generator and its types using different method of coil Arrangements (series and shunt) to understand their Usage	04
6	Familiarization with DC Motor and its parts.	04
7	Familiarization with AC generator using single/ poly phase arrangements to understand their usage.	06
	Total Hours =	30

MODULE 7A		
	MAINTENANCE PRACTICES –II	
	(In-House Practical)	
Practical	Contents	Hrs
1	Draw the different types of lines on a paper, used in engineering Drawing	20
2	Refuel the Aeroplane Piston aircraft by following the proper procedures.	02
3	Procedure of checking the aircraft after heavy. Write the step by step procedure.	06
4	Carry out weight and balance of the aircraft.	08
5	Tow the light aeroplane from hangar to the tarmac and make it ready for ground run. Note down the procedure you have followed with precautions.	04
	Total Hours =	40

MODULE 4 ELECTRONIC FUNDAMENTAL-I (In-House Practical)		
Practical	Contents	Hrs
1	Identification of basic electronic components (diodes, transistors), digital Multimeter and Oscilloscope	04
2	Practical on I-V Characteristics of (a) p-n junction Diode, and (b) Functional testing of diodes	06
3	Study of Clipping and Clamping circuits	02
4	Conversion of A C to DC Voltage using (a) Half wave rectifier and (b) Full wave rectifier (FWR).	04
5	Uses of basic electronic components (diodes, transistors), digital Multimeter and Oscilloscope	06
6	Familiarization with Servomechanisms: Open and closed loop systems and feedback	06
7	Familiarization with and use of printed circuit board.	02
	Total Hours=	30

MODULE 6		
Module 6, MATERIALS AND HARDWARE - I		
	(In-House Practical)	
Practical	Contents	Hrs
1	Identification of ferrous materials.	02
2	Identification of Non -Ferrous materials.	02
3	Identification of common composite materials.	02
4	Identification of Sealant and bonding agents.	02
5	Demonstration of simple repair of composite and non-metallic materials and structures (Bonding practices)	04
6	Identification of common types of wood and glue used in aircraft.	02
7	Identification and detection of defects in wood material and wooden structures	04
8	Identification of the common fabrics and adhesives used in aircraft structure.	02
9	Procedure of Joining two dissimilar metal strips to prevent it from Dissimilar metal corrosion.	06
10	Inspect the most corrosion prone areas of an aircraft.	04
	Total Hours =	30

MODULE 11B PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS - I (In-House Practical)		
Practical	Contents	Hrs
1	Familiarization of aircraft reference lines, station and zone numbers	04
2	Demonstration of major structural members of fixed wing aircraft.	02
3	Demonstration of Aircraft fuselage construction.	04
4	Familiarization Control surface, landing gear and engine attachment point	04
5	Demonstration of firewalls and engine mounts of aircraft.	02
6	Procedure of rigging the flight controls.	06
7	Demonstrate the control surface movement for an aircraft.	02
9	Practical familiarization of different types of aircraft trim tabs on aircraft available in hanger.	04
10	Practical demonstrations of flight control surface movement from cockpit	02
	Total Hours =	30

MODULE 5 DIGITAL TECHNIOUES ELECTRONIC INSTRUMENT SYSTEMS-II		
(In-House Practical)		
Practical	Contents	Hrs
1	Identification of components of Display systems	04
2	Demonstration of various types of cockpit layout.	04
3	Demonstration of ESD.	02
4	Study of fiber optic data transmission method over electrical wire propagation;	04
5	Familiarization with Single Stage CE amplifier of given gain	04

6	Study of correlation between different numbering systems	06
7	Study the various methods of digital to analogue conversion	04
8	Familiarization with typical data buses used in aircraft system.	06
9	Study of Universal Gates and making all other logic gates using universal gates.	06
	Total Hours =	40

MODULE 6 MATERIALS AND HARDWARE II		
	(In-House Practical)	
Practical	Contents	Hrs
1	Identification of different thread forms.	02
2	Measuring of screw threads.	02
3	Identification of aircraft bolts and nuts.	02
4	Identification of aircraft screws and dowels.	02
5	Insertion and removal of aircraft studs.	04
6	Identification and use of aircraft locking devices.	02
7	Identification of rigid and flexible pipes and standard unions for aircraft.	02
8	Bending and flaring practice of aircraft pipes.	04
9	Inspection of aircraft pipes and hoses.	02
10	Cleaning and inspection of aircraft bearings.	02
11	Identification of gears, belts and pulleys, chains and sprockets;	04
12	Check an aircraft electrical circuit for continuity in conjunction with an	02
	electrical wiring diagram.	02
	Total Hours =	30

MODULE 16 Piston Engine - I (In-House Practical)		
Practical	Contents	Hrs
1	Familiarization with the functioning of 2 stroke and 4 stroke piston engines.	4
2	Familiarization with constructions and functions of piston engines.	4
3	Identification of various components of piston engines like Crank case, crank shaft, cam shafts.	4
4	Identification of cylinder and piston assemblies.	4
5	Identification of connecting rods, inlet and exhaust manifolds.	4
6	Familiarization with the functioning of accessory gear box valve mechanism.	4
7	Familiarization with the functioning of supercharger/ turbocharger.	4
8	Procedure of Fuel Sample Check.	2
Total Hours =		30

MODULE 17A PROPELLER (In House Practical)		
Practical	Contents	Hrs
1	Familiarization with different types of propeller.	04
2	Check the propeller blade angle.	10
3	Check Propeller track.	04
4	Inspection of propeller blade for damage, erosion, corrosion, impact damage, delamination etc.	02
5	Familiarization with propeller electrical de-icing system.	02
6	Preparation for propeller storage and preservation.	04
7	Wire locking of propeller mounting nuts.	04
	Total Hours =	30

MODULE 11B PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS - II (In-House Practical)		
Practical	Contents	Hrs.
1	Name & location of emergency equipment.	04
2	Procedure to install Gust locks to prevent flight controls from fluttering.	04
3	Demonstrations of Seats, harnesses belts,	02
4	Demonstrations for brake bleeding methods on light airplane and identify the type of hydraulic fluids by its color.	04
5	Greasing of aircraft wheels.	04
6	Drain all the sumps of aircraft fuel system and check for presence of water.	02
7	Demonstration of landing gear indication and warning systems of aircrafts.	02
8	Familiarization of pneumatic system of the aircraft.	02
9	Locate the jacking points of an aircraft. Precautions that should taken when jacking the aircraft.	04

10	Demonstrate the correct way to inspect and clean rubber deicer boot.	02
	Total Hours =	30

MODULE 11B PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS – III (Avionics) (In-House Practical)			
Practical	Contents	Hrs	
1	Familiarization with pitot static instruments	04	
2	Pitot static leak test as per manufacturer's instructions.	06	
3	Compass Swinging and preparing the deviation card.	06	
4	Gyro instruments familiarization.	06	

5	Familiarization with Navigation equipment.	04
6	Familiarization of ELT.	04
7	Demonstration of Reading and interpretation of electrical schematic and wiring diagrams and Identification of components of electrical power supply system.	04
9	Demonstrate Installation and operation check of Batteries in aircraft	04
10	Familiarization of voltage adjustment.	02
	Total Hours =	40

MODULE 16 PISTON ENGINE - II		
	(In-House Practical)	
Practical	Contents	Hrs
1	Familiarization with engine fuel system and different types of carburetors.	04
2	Familiarization with engine driven fuel pump.	02
3	Identification and inspection of components and function of lubrication system.	02
4	Familiarization with different parts of magneto, impulse coupling etc.	04
5	Inspection of ignition harness and ignition switch.	02
6	Spark plug cleaning, gap checking and testing.	02
7	Perform top overhaul of the engine.	14
8	Procedure for engine ground run-up	06
9	Familiarize with piston engine instruments like tachometer, CHT gauge, oil pressure gauge, manifold pressure gauge etc.	04
	Total Hours =	40

MODULE 11B PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS - IV (In-House Practical)			
Practical	Contents	Hrs	
1	Procedure of installation of aircraft battery in the aircraft.	06	
2	Demonstration of inspection of hand held CO2 fire extinguisher.	06	
3	Demonstration for inspection of Portable fire extinguisher	06	
4	Familiarization of oxygen system of an aircraft.	08	
5	Familiarization with the different types of aircraft lights.	04	
Total Hours =			