Training Syllabus For Semester 1

Semester	Module / Sub Module	Total Hrs. Allotted (In PAMEC)		Practical Hrs in Contracted	Total Training	
		Theory	Practical	AMO	1115	
	1. Module 3 (Part 1) - Electrical Fundamentals – I	60	30			
1 st Semester	2. Module 7A (Part 1) - Maintenance Practices –I	50	60			
	3. Module 8 Basic Aerodynamics	50	20			
	4. Module 9A - Human Factors	60				
	Total Hrs. =	220	110		330 Hrs.	

Module 3 - Electrical Fundamentals – I

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
3.1	Electron Theory Structure and distribution of electrical charges within atoms, molecules, ions, compounds; Molecular structure of conductors, semiconductors and insulators.	1	2
3.2	Static Electricity and Conduction Static electricity and distribution of electrostatic charges; Electrostatic laws of attraction and repulsion; Units of charge, Coulomb's Law; Conduction of electricity in solids, liquids, gases and a vacuum.	2	4
3.3	Electrical Terminology The following terms, their units and factors affecting them: potential difference, electromotive force, voltage, current, resistance, conductance, charge, conventional current flow, electron flow.	2	4
3.6	DC Circuits Ohms Law, Kirchoff's Voltage and Current Laws; Calculations using the above laws to find resistance, voltage and current; Significance of the internal resistance of a supply.	2	6
3.7	Resistance/Resistor (a) Resistance and affecting factors; Specific resistance; Resistor colour code, values and tolerances, preferred values, wattage ratings; Resistors in series and parallel; Calculation of total resistance using series, parallel and series parallel combinations; Operation and use of potentiometers and rheostats; Operation of Wheatstone Bridge. (b) Positive and negative temperature coefficient conductance; Fixed resistors, stability, tolerance and limitations, methods of construction; Variable resistors, thermistors, voltage dependent resistors; Construction of potentiometers and rheostats; Construction of Wheatstone Bridge;	2	6
3.9	Capacitance/Capacitor Operation and function of a capacitor; Factors affecting capacitance area	2	8

Training Syllabus for Semester 2

Somostor	Module / Sub Module	Total Hrs Allotted (In PAMEC)		Practical Hrs in	Total Training	
Semester	Widduit / Sub Widduit	Theory	Practical	Contracted AMO	Hrs	
2 nd	1. Module 3 Part (II), Part of 5.12, 5.14, 6.11, 7.4, 7.7 - Electrical Fundamentals - II	60	30			
Semester	2. Module 7A (Part II) and Part of 6.4 - Maintenance Practices -II	60	40			
	3. Module 10 - Aviation Legislation -I	90	10			
	Total Hrs =	210	80		290 Hrs.	

Module 3 (Part Module 5, 6, 7) - Electrical Fundamentals – II

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
3.4	Generation of Electricity Production of electricity by the following methods: light, heat, friction, pressure, chemical action, magnetism and motion.	1	4
3.5	DC Sources of Electricity Construction and basic chemical action of: primary cells, secondary cells, lead acid cells, nickel cadmium cells, other alkaline cells; Cells connected in series and parallel; Internal resistance and its effect on a battery; Construction, materials and operation of thermocouples; Operation of photo-cells.	2	8
3.8	Power Power, work and energy (kinetic and potential); Dissipation of power by a resistor; Power formula; Calculations involving power, work and energy.	2	4

3.12	DC Motor/Generator Theory Basic motor and generator theory; Construction and purpose of components in DC generator; Operation of, and factors affecting output and direction of current flow in DC generators; Operation of, and factors affecting output power, torque, speed and direction of rotation of DC motors; Series wound, shunt wound and compound motors; Starter Generator construction.	2	8
3.17	AC Generators Rotation of loop in a magnetic field and waveform produced;	2	8

	Operation and construction of revolving armature and revolving field type AC generators; Single phase, two phase and three phase alternators; Three phase star and delta connections advantages and uses; Permanent Magnet Generators.		
3.18	AC Motors Construction, principles of operation and characteristics of: AC synchronous and induction motors both single and polyphase; Methods of speed control and direction of rotation; Methods of producing a rotating field: capacitor, inductor, shaded or split pole.	2	6
5.12	Electrostatic Sensitive Devices Special handling of components sensitive to electrostatic discharges; Awareness of risks and possible damage, component and personnel anti-static protection devices.	2	4
5.14	Electromagnetic Environment Influence of the following phenomena on maintenance practices for electronic system: EMC-Electromagnetic Compatibility EMI-Electromagnetic Interference HIRF-High Intensity Radiated Field Lightning/lightning protection	2	6
6.11	Electrical Cables and Connectors Cable types, construction and characteristics; High tension and co-axial cables; Crimping; Connector types, pins, plugs, sockets, insulators, current and voltage rating, coupling, identification codes.	2	4
7.4	Avionic General Test Equipment – Operation, function and use of avionic general test equipment.	2	2

	Electrical Wiring Interconnection System (EWIS)		
	Continuity, insulation and bonding techniques and testing;		
	Use of crimp tools: hand and hydraulic operated; Testing of		
	crimp joints; Connector pin removal and insertion; Co-axial		
	cables: testing and installation precautions; Identification of		
7.7	wire types, their inspection criteria and damage tolerance.	3	6
	Wiring protection techniques: Cable looming and loom		
	support, cable clamps, protective sleeving techniques		
	including heat shrink wrapping, shielding.		
	EWIS installations, inspection, repair, maintenance and		
	cleanliness standards.		

Module 7A (Part Module 6) - Maintenance Practices -II

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
7.5	Engineering Drawings, Diagrams and Standards Drawing types and diagrams, their symbols, dimensions, tolerances and projections; Identifying title block information Microfilm, microfiche and computerised presentations; Specification 100 of the Air Transport Association (ATA) of America; Aeronautical and other applicable standards including ISO, AN, MS, NAS and MIL; Wiring diagrams and schematic diagrams.	2	10
7.16	 Aircraft Weight and Balance (a) Centre of Gravity/Balance limits calculation: use of relevant documents; (b) Preparation of aircraft for weighing; Aircraft weighing; 	2	4
7.17	Aircraft Handling and Storage Aircraft taxiing/towing and associated safety precautions; Aircraft jacking, chocking, securing and associated safety precautions; Aircraft storage methods; Refuelling/defuelling procedures; De-icing/anti-icing procedures; Electrical, hydraulic and pneumatic ground supplies. Effects of environmental conditions on aircraft handling and operation.	2	8
	Disassembly, Inspection, Repair and Assembly	3	
	Techniques (a) Types of defects and visual inspection techniques. Corrosion removal, assessment and reprotection.	2	
7.18	(b) General repair methods, Structural Repair Manual; Ageing, fatigue and corrosion control programmes;	2	20
	(c) Nondestructive inspection techniques including, penetrant, radiographic, eddy current, ultrasonic and boroscope methods. (d) Disassembly and re-assembly techniques.	2	
	(e) Trouble shooting techniques	2	
7.19	 Abnormal Events (a) Inspections following lightning strikes and HIRF penetration. (b) Inspections following abnormal events such as heavy landings and flight through turbulence. 	2	4
7.20	Maintenance Procedures Maintenance planning; Modification procedures; Stores procedures; Certification/release procedures; Interface with aircraft operation; Maintenance Inspection/Quality Control/Quality Assurance; Additional maintenance procedures. Control of life limited components	2	8
6.4	Corrosion (a) Chemical fundamentals; Formation by, galvanic action process, microbiological, stress;	1	6

(b) Types of corrosion and their identification; Causes of		
corrosion; Material types, susceptibility to corrosion.	3	

Module 10 - Aviation Legislation –I

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
10.1	Regulatory Framework Role of International Civil Aviation Organization; The Aircraft Act and Rules made there under Role of the DGCA; Relationship between CAR-21, CAR-M, CAR-145, CAR-66, CAR 147 The Aircraft Rules (Applicable to Aircraft Maintenance and Release) Aeronautical Information Circulars (Applicable to Aircraft Maintenance and Release) CAR Sections 1 and 2	1	10
10.2	CAR-66 Certifying Staff – Maintenance Detailed understanding of CAR-66.	2	20
10.4	Aircraft Operations Commercial Air Transport/Commercial Operations Air Operators Certificates; Operators Responsibilities, in particular regarding continuing airworthiness and maintenance; Documents to be carried on board; Aircraft Placarding (Markings);	1	10
10.5	 Aircraft Certification (a) General - Certification rules: such as FAA & EACS 23/25/27/29; Type Certification; Supplemental Type Certification; CAR-21 Design/Production Organization Approvals. Aircraft Modifications and repairs approval and certification Permit to fly requirements (b) Documents - Certificate of Airworthiness; Certificate of Registration; Noise Certificate; Weight Schedule; Radio Station Licence and Approval. 	1	20
10.7	Applicable National and International Requirements(a) Maintenance Programme, Maintenance checks andinspections;Master Minimum Equipment Lists, Minimum EquipmentList, Dispatch Deviation Lists;Airworthiness Directives;Service Bulletins, manufacturers service information;Modifications and repairs;	2	30

Maintenance structural repa	documentation: ir manual,	maintenance	manuals,		
illustrated par	s catalogue, etc.;				
(b) Continuing Test flights; ETOPS /EDT RVSM, maint RNP, MNPS (All Weather (Category 2/ requirements.	airworthiness; D, maintenance and enance and dispate Operations perations, 3 operations a	d dispatch require h requirements nd minimum	ements; equipment	1	

Training Syllabus For Semester 3

Somester	Module / Sub Module	Total Hrs Allotted (In PAMEC)		Practical Hrs in	Total Training
Semester	Would / Sub Would	Theory	Practical	Contracted AMO	Hrs
	1. Module 4 - Electronic Fundamental - I	60	30		
	2. Module - 5 Digital Techniques Electronic Instrument System - I	10			
3 rd	3. Module 6 (Part 1) and Part 7.14.2 - Material and Hardware	70	30	60	
Semester	4. Module 10 (Part II) – Aviation Legislation - II	90			
	5. Module - 11B Piston Aeroplane Aerodynamics, Structures And Systems - I	30	30		
	Total Hrs =	260	90	60	410 Hrs

Module 4 - Electronic Fundamental – I

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
4.1	Semiconductors4.1.1 DiodesDiode symbols;Diode characteristics and properties;Diodes in series and parallel;Main characteristics and use of silicon controlled rectifiers(thyristors), light emitting diode, photo conductive diode,varistor, rectifier diodes;Functional testing of diodes.4.1.2 TransistorsTransistor symbols;Component description and orientation;Transistor characteristics and properties.	2	36
	4.1.3 Integrated Circuits		

	Description and operation of logic circuits and linear circuits/operational amplifiers.	1	
4.2	Printed Circuit Boards Description and use of printed circuit boards.	1	4
4.3	Servomechanisms Understanding of the following terms: Open and closed loop systems, feedback, follow up, analogue transducers; Principles of operation and use of the following synchro system components/features: resolvers, differential, control and torque, transformers, inductance and capacitance transmitters.	1	20

MODULE 5 -	Digital Tech	niques Electronic	Instrument Syste	em - I
	0	1	•	

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
5.10	Fibre Optics Advantages and disadvantages of fiber optic data transmission over electrical wire propagation; Fibre optic data bus; Fibre optic related terms; Terminations; Couplers, control terminals, remote terminals; Application of fibre optics in aircraft systems.	1	10

Module 6, (Part Module 7) - Material and Hardware-I

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
61	Aircraft Materials — Ferrous (a) Characteristics, properties and identification of common alloy steels used in aircraft; Heat treatment and application of alloy	2	24
	steels; (b) Testing of ferrous materials for hardness, tensile strength, fatigue strength and impact resistance.	1	
6.2	Aircraft Materials — Non-Ferrous (a) Characteristics, properties and identification of common non- ferrous materials used in aircraft; Heat treatment and application	2	22
	of non-ferrous materials; (b) Testing of non-ferrous material for hardness, tensile strength, fatigue strength and impact resistance.	1	
6.3	 Aircraft Materials - Composite and Non- Metallic 6.3.1 Composite and non-metallic other than wood and fabric (a) Characteristics, properties and identification of common composite and nonmetallic materials, other than wood, used in aircraft; Sealant and bonding agents. (b) The detection of defects/deterioration in composite and non-metallic material. Repair of composite and non-metallic material. 	2	8
6.3	6.3.2 Wooden structures Construction methods of wooden airframe structures; Characteristics, properties and types of wood and glue used in aeroplanes; Preservation and maintenance of wooden structure; Types of defects in wood material and wooden structures; The detection of defects in wooden structure; Repair of wooden structure.	2	6
6.3	 6.3.3 Fabric covering Characteristics, properties and types of fabrics used in aeroplanes; Inspections methods for fabric; Types of defects in fabric; Repair of fabric covering. 	2	6
7.14	7.14.2 Composite and non-metallic Bonding practices; Environmental conditions Inspection methods	2	4

CAR 66 Para	Details of Syllabus		Hrs. Allotted
10.3	CAR-145 — Approved Maintenance Organizations Detailed understanding of CAR-145 and CAR M Subpart F	2	26
10.6	CAR-M Detail understanding of CAR M provisions related to Continuing Airworthiness Detailed understanding of CAR-M.		24
10.8	Safety Management System State Safety Programme Basic Safety Concepts Hazards & Safety Risks SMS Operation SMS Safety performance Safety Assurance	2	22
10.9	Fuel Tank Safety Special Federal Aviation Regulations (SFARs) from 14 CFR SFAR 88 of the FAA and of JAA TGL 47 Concept of CDCCL, Airworthiness Limitations Items (ALI)	2	18

Module 10 - Aviation Legislation –II

Module 11B - Piston Aeroplane Aerodynamics, Structures and Systems - I

	Airframe Structures — General Concepts		
	(a) Airworthiness requirements for structural strength;		
	Structural classification, primary, secondary and tertiary;		
	Fail safe, safe life, damage tolerance concepts;		
	Zonal and station identification systems;		
	Stress, strain, bending, compression, shear, torsion, tension,		
	hoop stress, fatigue;		
	Drains and ventilation provisions;		
	System installation provisions;		
	Lightning strike protection provision.		
	Aircraft bonding		
11.2		2	14
	(b) Construction methods of: stressed skin fuselage, formers,		
	stringers, longerons,		
	bulkheads, frames, doublers, struts, ties, beams, floor		
	structures, reinforcement,		
	methods of skinning, anti-corrosive protection, wing,		
	empennage and engine		
	attachments;		
	Structure assembly techniques: riveting, bolting, bonding;		
	Methods of surface protection, such as chromating,		
	anodising, painting;		
	Surface cleaning;		

	Airframe symmetry: methods of alignment and symmetry		
	checks.		
	Airframe Structures — Aero planes		
	11.3.1 Fuselage (ATA 52/53/56)		
	Construction and pressurization sealing;		
	Wing, tail-plane pylon and undercarriage attachments;		
	Seat installation;		
	Doors and emergency exits: construction and operation;		
	Window and windscreen attachment.		
	11.3.2 Wings (ATA 57)		
	Construction;		
	Fuel storage;		
	Landing gear, pylon, control surface and high lift/drag	2	
11.3	attachments.	2	16
	11.3.3 Stabilisers (ATA 55)		
	Construction;		
	Control surface attachment.		
	11.3.4 Flight Control Surfaces (ATA 55/57)		
	Construction and attachment;		
	Balancing — mass and aerodynamic.		
	11.3.5 Nacelles/Pylons (ATA 54)		
	Nacelles/Pylons:		
	— Construction;		
	— Firewalls;		
	— Engine mounts.		

Training Syllabus For Semester 4

Somostor	Modulo / Sub Modulo	Total Hrs Allotted (In PAMEC)		Practical Hrs in	Total Training
Semester	Woulle / Sub Woulle	Theory	Practical	Contracted AMO	Hrs
	1. Module 5 – Part II Digital Technique Electronic Instrument Systems – II	60	40		
4 th Semester	2. Module 6 (Part II), Part 7.8 to 7.13- Material and Hardware	60	30	60 Hrs	
	3. Module 16 (Part 1) - Piston Engine - I	60	30		
	4. Module 17A - Propeller	60	30		
	Total Hrs =	240	130	60	430 Hrs

Module 5 - Digital Technique Electronic Instrument Systems – II

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
5.1	Electronic Instrument Systems Typical systems arrangements and cockpit layout of electronic instrument systems.	2	2
5.11	Electronic Displays Principles of operation of common types of displays used in modern aircraft, including Cathode Ray Tubes, Light Emitting Diodes and Liquid Crystal Display.	1	16
5.13	Software Management Control Awareness of restrictions, airworthiness requirements and possible catastrophic effects of unapproved changes to software programmes.	1	10
5.15	Typical Electronic/Digital Aircraft Systems General arrangement of typical electronic/digital aircraft systems and associated BITE(Built In Test Equipment) testing such as: (a) For B1 and B2 only: ACARS-ARINC Communication and Addressing and Reporting System EICAS-Engine Indication and Crew Alerting System FBW-Fly by Wire FMS-Flight Management System IRS-Inertial reference system (b) For B1, B2 and B3: ECAM-Electronic Centralized Aircraft Monitoring EFIS-Electronic Flight Instrument System GPS-Global Positioning System	2	32

TCAS-Traffic Collision Avoi	dance system
Integrated modular Avionic	
Cabin System Information sy	stem

Module 6 (Part Module 7) - Material and Hardware - II

CAR 66	Details of Syllabus	Laval	Hrs.
Para	Details of Synabus	Level	Allotted

	Fasteners		
	6.5.1 Screw threads		
	Screw nomenclature; Thread forms, dimensions and		
	tolerances for standard threads used in aircraft;		
	Measuring screw threads;		
	6.5.2 Bolts, studs and screws		
	Bolt types: specification, identification and marking of		
	aircraft bolts, international standards; Nuts: self-locking,		
	anchor, standard types: Machine screws: aircraft		
6.5	specifications:	•	18
	Studs: types and uses, insertion and removal:	2	
	Self-tapping screws, dowels.		
	6.5.3 Locking devices		
	Tab and spring washers, locking plates, split pins, pal nuts,		
	wire locking quick release fasteners, keys, circlins, cotter		
	nins		
	6.5.4 Aircraft rivets		
	Types of solid and blind rivets: specifications and		
	identification, heat treatment.		
	Pipes and Unions		
	(a) Identification of, and types of rigid and flexible pipes and		
6.6	their connectors used in aircraft:	2	4
	(b) Standard unions for aircraft hydraulic, fuel, oil.	_	
	pneumatic and air system pipes.		
	Springs	2	2
6.7	Types of springs, materials, characteristics and applications.	2	2
	Bearings		
6.8	Purpose of bearings, loads, material, construction; Types of	2	2
	bearings and their application.		
	Transmissions		
	Gear types and their application;		
6.9	Gear ratios, reduction and multiplication gear systems,	2	2
	driven and driving gears, idler gears, mesh patterns;		
	Belts and pulleys, chains and sprockets.		
	Control Cables		
	Types of cables;		
6.10	End fittings, turnbuckles and compensation devices;	2	2
	Pulleys and cable system components; Bowden cables;		
	Aircraft flexible control systems.		
7.8	Riveting	2	4
	Riveted joints, rivet spacing and pitch; Tools used for		
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	Riveted joints, rivet spacing and pitch; Tools used for riveting and dimpling; Inspection of riveted joints.		
7.9	Pipes and Hoses Bending and belling/flaring aircraft pipes; Inspection and testing of aircraft pipes and hoses; Installation and clamping of pipes.	2	6
7.10	Springs Inspection and testing of springs.	2	2

7.11	Bearings Testing, cleaning and inspection of bearings; Lubrication requirements of bearings; Defects in bearings and their causes.	2	4
7.12	Transmissions Inspection of gears, backlash; Inspection of belts and pulleys, chains and sprockets; Inspection of screw jacks, lever devices, push-pull rod systems	2	4
7.13	Control Cables Swaging of end fittings; Inspection and testing of control cables; Bowden cables; aircraft flexible control systems.	2	10

Module 16 - Piston Engine – I

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
16.1	Fundamentals Mechanical, thermal and volumetric efficiencies; Operating principles — 2 stroke, 4 stroke, Otto and Diesel; Piston displacement and compression ratio; Engine configuration and firing order.	2	10
16.2	Engine Performance Power calculation and measurement; Factors affecting engine power; Mixtures/leaning, pre-ignition.		10
16.3	Engine Construction Crank case, crank shaft, cam shafts, sumps; Accessory gearbox; Cylinder and piston assemblies; Connecting rods, inlet and exhaust manifolds; Valve mechanisms; Propeller reduction gearboxes.	2	20
16.7	Supercharging/Turbocharging Principles and purpose of supercharging and its effects on engine parameters; Construction and operation of supercharging/turbocharging systems; System terminology; Control systems; System protection.	2	20

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
17.1	FundamentalsBlade element theory;High/low blade angle, reverse angle, angle of attack, rotational speed;Propeller slip;Aerodynamic, centrifugal, and thrust forces;Torque;Relative airflow on blade angle of attack;Vibration and resonance.		12
17.2	 Propeller Construction Construction methods and materials used in wooden, composite and metal propellers; Blade station, blade face, blade shank, blade back and hub assembly; Fixed pitch, controllable pitch, constant speeding propeller; Propeller/spinner installation. 	2	16
17.3	 Propeller Pitch Control Speed control and pitch change methods, mechanical and electrical/electronic; Feathering and reverse pitch; Over speed protection. 		10
17.4	Propeller Synchronizing Synchronizing and synchrophasing equipment.	2	4
17.5	Propeller Ice Protection Fluid and electrical de-icing equipment.	2	4
17.6	Propeller Maintenance Static and dynamic balancing; Blade tracking; Assessment of blade damage, erosion, corrosion, impact damage, delamination; Propeller treatment/repair schemes; Propeller engine running.	3	10
17.7	Propeller Storage and Preservation Propeller preservation and depreservation	2	4

Module 17A - Propeller

Training Syllabus For

Semester	Madula / Sub Madula	Total H (In P	rs Allotted AMEC)	Practical Hrs in	Total Training Hrs
	Woulle / Sub Woulle	Theory	Practical	Contracted AMO	

	 Module 11B Piston Aeroplane Aerodynamics, Structures And Systems - II 	90	30		
5 th Semester	2. Module 11B Piston Aeroplane Aerodynamics, Structures And Systems – III (Avionics)	30	40	60	
	3. Module 16 Piston Engine - II	90	40		
Total Hrs = 210 110 60 380 Hrs.					

Semester 5

Module 11B - Piston Aeroplane Aerodynamics, Structures and Systems - II

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
11.4	Air Conditioning and Cabin Pressurization (ATA 21) Pressurization and air conditioning systems; Cabin pressure controllers, protection and warning devices, Heating Systems	3	10
11.7	 Equipment and Furnishings (ATA 25) (a) Emergency equipment requirements; Seats, harnesses and belts. (b) Cabin lay-out; Equipment lay-out; 	2	10
	Cabin Furnishing Installation (level 2); Cabin entertainment equipment; Galley installation; Cargo handling and retention equipment; Airstairs.	1	
11.9	Flight Controls (ATA 27) Primary controls: aileron, elevator, rudder; Trim tabs; High lift devices; System operation: manual; Gust locks; Balancing and rigging; Stall warning system.	3	12
11.10	Fuel Systems (ATA 28) System lay-out;	3	12

Fuel tanks;	
Supply systems;	
Cross-feed and transfer;	
Indications and warnings;	
Refuelling and defuelling.	

	Hydraulic Power (ATA 29)		
	System lay-out;		
	Hydraulic fluids;		
11 11	Hydraulic reservoirs and accumulators;	2	10
11.11	Pressure generation: electric, mechanical; Filters	3	10
	Pressure Control;		
	Power distribution;		
	Indication and warning systems.		
	Ice and Rain Protection (ATA 30)		
	Ice formation, classification and detection;		
11 12	De-icing systems: electrical, hot air, pneumatic and	3	10
11.12	chemical;	3	10
	Probe and drain heating;		
	Wiper systems.		
	Landing Gear (ATA 32)		
	Construction, shock absorbing;		
	Extension and retraction systems: normal and emergency;		
11.13	Indications and warning;	3	10
	Wheels, brakes, antiskid and auto braking;		
	Tyres; Steering.		
	Air-ground sensing		
	Pneumatic/Vacuum (ATA 36)		
	System lay-out;		
	Sources: engine/APU, compressors, reservoirs, ground		
11.16	supply;	3	10
	Pressure control;	3	10
	Distribution;		
	Indications and warnings;		
	Interfaces with other systems.		

Module 11B - Piston Aeroplane Aerodynamics, Structures and Systems – III (Avionics)

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
11.5	Instruments/Avionic Systems 11.5.1 Instrument Systems (ATA 31) Pitot static: altimeter, air speed indicator, vertical speed indicator; Gyroscopic: artificial horizon, attitude director, direction indicator, horizontal situation indicator, turn and slip indicator, turn coordinator:	2	30

Сог	mpasses: direct reading, remote reading;	1	
Ang	gle of attack indication, stall warning systems.		
Gla	ass cockpit;		
Oth	ner aircraft system indication.		
11.	5.2 Avionic Systems		
Fur	ndamentals of system lay-outs and operation of:		
— .	Auto Flight (ATA 22);		
	Communications (ATA 23);		
	Navigation Systems (ATA 34).		

Module 16 - Piston Engine – II

CAR 66 Para	Details of Syllabus		Hrs. Allotted
16.4	 Engine Fuel Systems 16.4.1 Carburetors Types, construction and principles of operation; Icing and heating. 16.4.2 Fuel injection systems Types, construction and principles of operation. 16.4.3 Electronic engine control Operation of engine control and fuel metering systems including electronic engine control (FADEC); Systems lay-out and components. 	2	20
16.5	Starting and Ignition Systems Starting systems, pre-heat systems; Magneto types, construction and principles of operation; Ignition harnesses, spark plugs; Low and high tension systems.	2	10
16.6	Induction, Exhaust and Cooling Systems Construction and operation of: induction systems including alternate air systems; Exhaust systems, engine cooling systems — air and liquid.		10
16.8	Lubricants and Fuels Properties and specifications; Fuel additives; Safety precautions.	2	6
16.9	Lubrication Systems System operation/lay-out and components.	`2	6
16.10	Engine Indication Systems Engine speed; Cylinder head temperature; Coolant temperature; Oil pressure and temperature; Exhaust Gas Temperature; Fuel pressure and flow; Manifold pressure.	2	10
16.11	Powerplant Installation	2	16

	Configuration of firewalls, cowlings, acoustic panels, engine mounts, anti-vibration mounts, hoses, pipes, feeders, connectors, wiring looms, control cables and rods, lifting points and drains.		
16.12	Engine Monitoring and Ground Operation Procedures for starting and ground run-up; Interpretation of engine power output and parameters; Inspection of engine and components: criteria, tolerances, and data specified by engine manufacturer.	3	10
16.13	Engine Storage and Preservation Preservation and de-preservation for the engine and accessories/ systems	2	2

Training Syllabus For Semester 6

Somostor	Module / Sub Module	Total Hrs Allotted (In PAMEC)		Practical Hrs in	Total Training
Semester		Theory	Practical	Contracted AMO	Hrs
6 th	1. Module 11B		10		
Semester	Piston Aeroplane Aerodynamics,	60	40	60	
	Structures And Systems - IV				
	Total Hrs =	60	40	60	160 Hrs.

Module 11B - Piston Aeroplane Aerodynamics, Structures and Systems – IV

CAR 66 Para	Details of Syllabus	Level	Hrs. Allotted
11.6	Electrical Power (ATA 24)		
	Batteries Installation and Operation;		
	DC power generation;		
	Voltage regulation;	3	14
	Power distribution;		
	Circuit protection;		
	Inverters, transformers.		

11.8	 Fire Protection (ATA 26) (a) Fire extinguishing systems; Fire and smoke detection and warning systems; System tests. (b) Portable fire extinguisher. 	3	16
11.14	Lights (ATA 33) External: navigation, anti-collision, landing, taxiing, ice; Internal: cabin, cockpit, cargo; Emergency.	3	14
11.15	Oxygen (ATA 35) System lay-out: cockpit, cabin; Sources, storage, charging and distribution; Supply regulation; Indications and warnings;	3	16