MODULE 1. MATHEMATICS

MODULE 1. MATHEMATICS	LEVEL	
	A	B1 B2 B2L B3
1.1 *Arithmetic*	1	2
1.2 *Algebra*		
(a) Simple algebraic expressions;	1	2
(b) Equations.	—	1
1.3 *Geometry*		
(a) Simple geometrical constructions;	—	1
(b) Graphical representation;	2	2
(c) Trigonometry.	—	2

MODULE 2. PHYSICS

MODULE 2. PHYSICS	LEVEL	
	A B3	B1 B2 B2L
2.1 *Matter*	1	2
2.2 *Mechanics*		
2.2.1 *Statics*	1	2
2.2.2 *Kinetics*	1	2
2.2.3 *Dynamics*		
(a) Mass, force and energy;	1	2
(b) Momentum and conservation of momentum.	1	2
2.2.4 *Fluid dynamics*		
(a) Gravity and density;	2	2
(b) Viscosity; compressibility on fluids; static, dynamic, and total pressure.	1	2
2.3 *Thermodynamics*		
(a) Temperature;	2	2
(b) Heat.	1	2
2.4 *Optics (light)*	—	2
2.5 *Wave motion and sound*	—	2

MODULE 3. ELECTRICAL FUNDAMENTALS

MODULE 3. ELECTRICAL FUNDAMENTALS		LEVEL		
		A	B1 B2 B2L	B3
3.1	*Electron theory*	1	1	1
3.2	*Static electricity and conduction*	1	2	1
3.3	*Electrical terminology*	1	2	1
3.4	*Generation of electricity*	1	1	1
3.5	*Sources of DC electricity*	1	2	2
3.6	*DC circuits*	1	2	1
3.7	*Resistance/resistor*			
	(a) Resistance;	—	2	1
	(b) Resistors.	—	1	—
3.8	*Power*	—	2	1
3.9	*Capacitance/capacitor*	—	2	1
3.10	*Magnetism*			
	(a) Theory of magnetism;	—	2	1
	(b) Magnetomotive force.	—	2	1
3.11	*Inductance/inductor*	—	2	1
3.12	*DC motor/generator theory*	—	2	1
3.13	*AC theory*	1	2	1
3.14	*Resistive (R), capacitive (C) and inductive (L) circuits*	—	2	1
3.15	*Transformers*	—	2	1
3.16	*Filters*	—	1	—
3.17	*AC generators*	—	2	1
3.18	*AC motors*	—	2	1

MODULE 4. ELECTRONICS FUNDAMENTALS

MODULE 4. ELECTRONICS FUNDAMENTALS		LEVEL		
		A	B1 B3	B2 B2L
4.1	*Semiconductors*			
4.1.1	*Diodes*			
	(a) Description and characteristics;	—	2	2
	(b) Operation and function.	—	—	2
4.1.2	*Transistors*			
	(a) Description and characteristics;	—	1	2
	(b) Construction and operation.	—	—	2
4.1.3	*Integrated circuits*			
	(a) Basic description and operation;	—	1	2
	(b) Description and operation.	—	—	2
4.2	*Printed circuit boards*	—	1	2
4.3	*Servomechanisms*			
	(a) Principles;	—	1	2
	(b) Construction, operation, and use.	—	—	2

MODULE 5. DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS

MODULE 5. DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS	LEVEL			
	A	B3	B1	B2 B2L
5.1 *Electronic instrument systems*	1	1	1	1
5.2 *Numbering systems*	—	—	1	2
5.3 *Data conversion*	—	—	1	2
5.4 *Data buses*	—	—	2	2
5.5 *Logic circuits*				
(a) Identification and applications;	—	—	2	2
(b) Interpretation of logic diagrams.	—	—	—	2
5.6 *Basic computer structure*				
(a) Computer terminology and technology;	1	1	2	2
(b) Computer operation.	—	—	—	2
5.7 *Microprocessors*	—	—	—	2
5.8 *Integrated circuits*	—	—	—	2
5.9 *Multiplexing*	—	—	—	2
5.10 *Fibre optics*	—	—	1	2
5.11 *Electronic displays*	1	1	2	2
5.12 *Electrostatic sensitive devices*	1	1	2	2
5.13 *Software management control*	—	1	2	2
5.14 *Electromagnetic environment*	—	1	2	2
5.15 *Typical electronic/digital aircraft systems*	1	1	1	1

MODULE 6. MATERIALS AND HARDWARE

MODULE 6. MATERIALS AND HARDWARE		LEVEL		
		A	B1 B3	B2 B2L
6.1	*Aircraft materials – ferrous*			
	(a) Alloy steels used in aircraft;	1	2	1
	(b) Testing of ferrous materials;	—	1	1
	(c) Repair and inspection procedures.	—	2	1
6.2	*Aircraft materials – non-ferrous*			
	(a) Characteristics;	1	2	1
	(b) Testing of non-ferrous materials;	—	1	1
	(c) Repair and inspection procedures.	—	2	1
6.3	*Aircraft materials – composite and non-metallic*			
	6.3.1 *Composite and non-metallic other than wood and fabric*			
	(a) Characteristics;	1	2	2
	(b) Detection of defects;	1	2	—
	(c) Repairs and inspection procedures.	—	2	1
	6.3.2 *Wooden structures*	1	1	—
	6.3.3 *Fabric covering*	—	1	—
6.4	*Corrosion*			
	(a) Chemical fundamentals;	1	1	1
	(b) Types of corrosion.	2	3	2
6.5	*Fasteners*			
	6.5.1 *Screw threads*	2	2	2
	6.5.2 *Bolts, studs, and screws*	2	2	2
	6.5.3 *Locking devices*	2	2	2
	6.5.4 *Aircraft rivets*	1	2	1
6.6	*Pipes and unions*			
	(a) Identification;	2	2	2
	(b) Standard unions.	2	2	1
6.7	*Springs*	—	2	1
6.8	*Bearings*	1	2	2
6.9	*Transmissions*	1	2	2
6.10	*Control cables*	1	2	1
6.11	*Electrical cables and connectors*	1	2	2

MODULE 7. MAINTENANCE PRACTICES

MODULE 7. MAINTENANCE PRACTICES	LEVEL		
	A	B1 B3	B2 B2L
7.1 *Safety precautions – aircraft and workshop*	3	3	3
7.2 *Workshop practices*	3	3	3
7.3 *Tools*	3	3	3
7.4 *(Reserved)*	—	—	—
7.5 *Engineering drawings, diagrams and standards*	1	2	2
7.6 *Fits and clearances*	1	2	1
7.7 *Electrical wiring interconnection system (EWIS)*	1	3	3
7.8 *Riveting*	1	2	—
7.9 *Pipes and hoses*	1	2	—
7.10 *Springs*	1	2	—
7.11 *Bearings*	1	2	—
7.12 *Transmissions*	1	2	—
7.13 *Control cables*	1	2	—
7.14 *Material handling*			
7.14.1 *Sheet metal*	—	2	—
7.14.2 *Composite and non-metallic*	—	2	—
7.14.3 *Additive manufacturing*	1	1	1
7.15 *(Reserved)*	—	—	—
7.16 *Aircraft weight and balance*			
(a) Centre-of-gravity calculation;	—	2	2
(b) Aircraft weighing.	—	2	—
7.17 *Aircraft handling and storage*	2	2	2
7.18 *Disassembly, inspection, repair and assembly techniques*			
(a) Types of defects and visual inspection techniques;	2	3	3
(b) General repair methods – structural repair manual;	—	2	—
(c) Non-destructive inspection techniques;	—	2	1
(d) Disassembly and reassembly techniques;	2	2	2
(e) Troubleshooting techniques.	—	2	2
7.19 *Abnormal events*			
(a) Inspections following lightning strikes and HIRF penetration;	2	2	2
(b) Inspections following abnormal events such as heavy landings and flight through turbulence.	2	2	—
7.20 *Maintenance procedures*	1	2	2
7.21 *Documentation & communication*	1	2	2

MODULE 8. BASIC AERODYNAMICS

MODULE 8. BASIC AERODYNAMICS		LEVEL	
		A B3	B1 B2 B2L
8.1	*Physics of the atmosphere* International Standard Atmosphere (ISA), application to aerodynamics	1	2
8.2	*Aerodynamics*	1	2
8.3	*Theory of flight*	1	2
8.4	*High-speed airflow*	1	2
8.5	*Flight stability and dynamics*	1	2

MODULE 9. HUMAN FACTORS

MODULE 9. HUMAN FACTORS		LEVEL
		ALL
9.1	*General*	2
9.2	*Human performance and limitations*	2
9.3	*Social psychology*	1
9.4	*Factors that affect performance*	2
9.5	*Physical environment*	1
9.6	*Tasks*	1
9.7	*Communication*	2
9.8	*Human error*	2
9.9	*Safety management*	2
9.10	*The 'Dirty Dozen' and risk mitigation*	2

MODULE 10. AVIATION LEGISLATION

MODULE 10. AVIATION LEGISLATION		LEVEL	
		A	B1 B2 B2L B3
10.1	*Regulatory framework*	1	1
10.2	*Certifying staff – maintenance*	2	2
10.3	*Approved maintenance organisations*	2	2
10.4	*Independent certifying staff*	—	3
10.5	*Air operations*	1	1
10.6	*Certification of aircraft, parts, and appliances*	2	2
10.7	*Continuing airworthiness*	2	2
10.8	*Oversight principles in continuing airworthiness*	1	1
10.9	*Maintenance and certification beyond the current EU regulations (if not superseded by EU requirements)*	-	1
10.10	*Cybersecurity in aviation maintenance*	1	1

MODULE 11. AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

MODULE 11. AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL				
	A1	A2	B1.1	B1.2	B3
11.1 *Theory of flight*					
(a) Aeroplane aerodynamics and flight controls;	1	1	2	2	1
(b) Aeroplane, other aerodynamic devices.	1	1	2	2	1
11.2 *Airframe structures* ***(ATA 51)***					
(a) General concepts;	2	2	2	2	2
(b) Airworthiness requirements for structural strength;	2	2	2	2	2
(c) Construction methods.	1	1	2	2	2
11.3 *Airframe structures – aeroplanes*					
11.3.1 *Fuselage, doors, windows* (**ATA 52/53/56**)	1	1	2	2	1
(a) Construction principles;					
(b) Airborne towing devices;	1	1	1	1	1
(c) Doors.	1	1	2	1	-
11.3.2 *Wings* (**ATA 57**)	1	1	2	2	1
11.3.3 *Stabilisers* (**ATA 55**)	1	1	2	2	1
11.3.4 *Flight control surfaces* (**ATA 55/57**)	1	1	2	2	1
11.3.5 *Nacelles/pylons* (**ATA 54**)	1	1	2	2	1
11.4 *Air conditioning and cabin pressurisation* (**ATA 21**)					
(a) Pressurisation;	1	1	3	3	—
(b) Air supply;	1	—	3	—	—
(c) Air conditioning;	1	—	3	—	—
(d) Safety and warning devices;	1	1	3	3	—
(e) Heating and ventilation system.	—	1	—	3	1
11.5 *Instruments/avionics systems*					
11.5.1 *Instrument systems* (**ATA 31**)	1	1	2	2	2
11.5.2 *Avionics systems* Fundamentals of system layouts and operation of: Autoflight (**ATA 22**); Communications (**ATA 23**); Navigation systems (**ATA 34**).	1	1	1	1	1
11.6 *Electrical power* (**ATA 24**)	1	1	3	3	3
11.7 *Equipment and furnishings* ***(ATA 25)***					
(a) Emergency equipment;	2	2	2	2	2
(b) Cabin and cargo layout.	1	1	1	1	—

MODULE 11. AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL				
	A1	A2	B1.1	B1.2	B3
11.8 *Fire protection* ***(ATA 26)***					
(a) Fire and smoke detection system and fire-extinguishing systems;	1	1	1	1	—
(b) Portable fire extinguisher.	1	1	1	1	1
11.9 *Flight controls* ***(ATA 27)***	1	1	3	3	2
(a) Primary and secondary flight controls;					
(b) Actuation and protection;	1	—	3	—	—
(c) System operation;	1	—	3	—	—
(d) Balancing and rigging.	1	1	3	3	2
11.10 *Fuel systems* ***(ATA 28, ATA 47)***	1	1	3	3	1
(a) Systems layout;					
(b) Fuel handling;	1	1	3	3	1
(c) Indication and warnings;	1	1	3	3	1
(d) Special systems;	1	—	3	—	—
(e) Balancing.	1	—	3	—	—
11.11 *Hydraulic power* ***(ATA 29)***	1	1	3	3	2
(a) System description;					
(b) System operation (1);	1	1	3	3	2
(c) System operation (2).	1	—	3	—	—
11.12 *Ice and rain protection* ***(ATA 30)***	1	1	3	3	1
(a) Principles;					
(b) De-icing;	1	1	3	3	1
(c) Anti-icing;	1	—	3	—	—
(d) Wipers;	1	1	3	3	1
(e) Rain repellent systems	1	—	3	—	—
11.13 *Landing gear* ***(ATA 32)***	2	2	3	3	2
(a) Description;					
(b) System operation;	2	2	3	3	2
(c) Air-ground sensing;	2	—	3	—	—
(d) Tail protection.	2	2	3	3	2
11.14 *Lights* ***(ATA 33)***	2	2	3	3	2
11.15 *Oxygen* ***(ATA 35)***	1	1	3	3	2
11.16 *Pneumatic/vacuum* ***(ATA 36)***					
(a) Systems;	1	1	3	3	2
(b) Pumps.	1	1	3	3	2
11.17 *Water/waste* ***(ATA 38)***					
(a) Systems;	2	2	3	3	2
(b) Corrosion.	2	2	3	3	2
11.18 *On-board maintenance systems* ***(ATA 45)***	1	—	2	—	—

MODULE 11. AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL				
	A1	A2	B1.1	B1.2	B3
11.19 *Integrated modular avionics* **(ATA 42)**					
(a) Overall system description and theory;	1	—	2	—	—
(b) Typical system layouts.	1	—	2	—	—
11.20 *Cabin systems* **(ATA 44)**	1	—	2	—	—
11.21 *Information systems* **(ATA 46)**	1	—	2	—	—

MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS

MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL	
	A3 A4	B1.3 B1.4
12.1 *Theory of flight – rotary wing aerodynamics*	1	2
12.2 *Flight control systems* **(ATA 67)**	2	3
12.3 *Blade tracking and vibration analysis* **(ATA 18)**	1	3
12.4 *Transmission*	1	3
12.5 *Airframe structures* **(ATA 51)**		
(a) General concept;	2	2
(b) Construction methods of the principal elements.	1	2
12.6 *Air conditioning* **(ATA 21)**		
12.6.1 *Air supply*	1	2
12.6.2 *Air conditioning*	1	3
12.7 *Instruments/avionics systems*		
12.7.1 *Instrument systems* **(ATA 31)**	1	2
12.7.2 *Avionics systems* Fundamentals of system layouts and operation of: Autoflight **(ATA 22)**; Communications **(ATA 23)**; Navigation systems **(ATA 34)**.	1	1
12.8 *Electrical Power* **(ATA 24)**	1	3
12.9 *Equipment and Furnishings* **(ATA 25)**		
(a) Emergency equipment; Seats, harnesses, and belts; Lifting systems;	2	2
(b) Emergency flotation systems; Cabin layout, cargo retention; Equipment layout; Cabin furnishing installation.	1	1
12.10 *Fire Protection* **(ATA 26)**	1	3
(a) Fire and smoke detection systems and Fire-extinguishing systems;		
(b) Portable fire extinguishers.	1	1
12.11 *Fuel Systems* **(ATA 28)**	1	3

MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL	
	A3 A4	B1.3 B1.4
12.12 *Hydraulic Power* ***(ATA 29)***	1	3
12.13 *Ice and Rain Protection* ***(ATA 30)***	1	3
12.14 *Landing Gear* ***(ATA 32)*** (a) System description and operation;	2	3
(b) Sensors.	2	3
12.15 *Lights* ***(ATA 33)***	2	3
12.16 *(Reserved)*	2	3
12.17 *Integrated Modular Avionics* ***(ATA 42)***		
(a) Overall system description and theory	1	2
(b) Typical system layouts	1	2
12.18 *On-board Maintenance Systems* ***(ATA 45)*** Central maintenance computers; Data-loading system; Electronic library system.	1	2
12.19 *Information Systems* ***(ATA 46)***	1	2

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS

C/N: Communication & Navigation; Ins.: Instruments; A/F: Autoflight; Sur.: Surveillance; A/S: Airframe & Systems

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL						
	B2	B2L Basic	B2L C/N	B2L Ins.	B2L A/F	B2L Sur.	B2L A/S
13.1 *Theory of Flight*							
(a) Aeroplane Aerodynamics and Flight Controls;	1	1	—	—	—	—	—
(b) Rotary Wing Aerodynamics.	1	1	—	—	—	—	—
13.2 *Structures – General Concepts* ***(ATA 51)***							
(a) General concept;	2	2	—	—	—	—	—
(b) Fundamentals of structural systems;	1	1	—	—	—	—	—
13.3 *Autoflight* ***(ATA 22)***							
(a) Fundamentals of automatic flight control;	3	—	—	—	3	—	—
(b) Autothrottle systems and automatic landing systems.	3	—	—	—	3	—	—
13.4 *Communication/Navigation* ***(ATA 23/34)***							
(a) Fundamentals of communication and navigation systems;	3	—	3	—	—	—	—

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL						
	B2	B2L Basic	B2L C/N	B2L Ins.	B2L A/F	B2L Sur.	B2L A/S
(b) Fundamentals of aircraft surveillance systems.	3	—	—	—	—	3	—
13.5 *Electrical power* ***(ATA 24)***	3	3	—	—	—	—	—
13.6 *Equipment and furnishings* ***(ATA 25)***	3	—	—	—	—	—	—
13.7 *Flight controls*							
(a) Primary and secondary flight controls ***(ATA 27)***;	2	—	—	—	2	—	—
(b) Actuation and protection;	2	—	—	—	2	—	—
(c) System operation;	3	—	—	—	3	—	—
(d) Rotorcraft flight controls ***(ATA 67)***.	2	—	—	—	2	—	—
13.8 *Instruments* ***(ATA 31)***	3	—	—	3	—	—	—
13.9 *Lights* ***(ATA 33)***	3	3	—	—	—	—	—
13.10 *On-board maintenance systems* ***(ATA 45)***	3	—	—	—	—	—	—
13.11 *Air conditioning and cabin pressurisation* ***(ATA 21)***							
(a) Pressurisation;	3	—	—	—	—	—	3
(b) Air supply;	1	—	—	—	—	—	1
(c) Air conditioning;	3	—	—	—	—	—	3
(d) Safety and warning devices.	3	—	—	—	—	—	3
13.12 *Fire protection* ***(ATA 26)***							
(a) Fire and smoke detection system and fire-extinguishing systems;	3	—	—	—	—	—	3
(b) Portable fire extinguisher.	1	—	—	—	—	—	1
13.13 *Fuel systems* ***(ATA 28, ATA 47)***							
(a) System layout;	1	—	—	—	—	—	1
(b) Fuel handling;	2	—	—	—	—	—	2
(c) Indications and warnings;	3	—	—	—	—	—	3
(d) Special systems;	1	—	—	—	—	—	1
(e) Balancing.	3	—	—	—	—	—	3
13.14 *Hydraulic power* ***(ATA 29)***							
(a) System layout;	1	—	—	—	—	—	1
(b) System operation (1);	3	—	—	—	—	—	3
(c) System operation (2).	3	—	—	—	—	—	3

MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS	LEVEL						
	B2	B2L Basic	B2L C/N	B2L Ins.	B2L A/F	B2L Sur.	B2L A/S
13.15 *Ice and rain protection* ***(ATA 30)***							
(a) Principles;	2	—	—	—	—	—	2
(b) De-icing;	3	—	—	—	—	—	3
(c) Anti-icing;	2	—	—	—	—	—	2
(d) Wiper systems;	1	—	—	—	—	—	1
(e) Rain repellent.	1	—	—	—	—	—	1
13.16 *Landing gear* ***(ATA 32)***							
(a) Description;	1	—	—	—	—	—	1
(b) System;	3	—	—	—	—	—	3
(c) Air–ground sensing.	3	—	—	—	—	—	3
13.17 *Oxygen* ***(ATA 35)***	3	—	—	—	—	—	3
13.18 *Pneumatic/vacuum* ***(ATA 36)***	2		—	—	—	—	2
13.19 *Water/waste* ***(ATA 38)***	2	—	—	—	—	—	2
13.20 *Integrated modular avionics* ***(ATA 42)***			—	—	—	—	—
(a) Overall system description and theory;	3	-	—	—	—	—	—
(b) Typical system layouts.	3	-	—	—	—	—	—
13.21 *Cabin systems* ***(ATA 44)***	3	—	—	—	—	—	—
13.22 *Information systems* ***(ATA 46)***	3	—	—	—	—	—	—

MODULE 14. PROPULSION

MODULE 14. PROPULSION	LEVEL
	B2 B2L Instruments B2L Airframe & Systems
14.1 *Engines*	
(a) Turbine engines;	1
(b) Auxiliary power units (APUs);	1
(c) Piston engines;	1
(d) Electric and hybrid engines;	2
(e) Engine control.	2
14.2 *Electric/electronic engine indication systems*	2
14.3 *Propeller systems*	2
14.4 *Starting and ignition systems*	2

MODULE 15. GAS TURBINE ENGINE

MODULE 15. GAS TURBINE ENGINE		LEVEL	
		A1 A3	B1.1 B1.3
15.1	*Fundamentals*	1	2
15.2	*Engine performance*	—	2
15.3	*Inlet*	2	2
15.4	*Compressors*	1	2
15.5	*Combustion section*	1	2
15.6	*Turbine section*	2	2
15.7	*Exhaust*	1	2
15.8	*Bearings and seals*	—	2
15.9	*Lubricants and fuels*	1	2
15.10	*Lubrication systems*	1	2
15.11	*Fuel systems*	1	2
15.12	*Air systems*	1	2
15.13	*Starting and ignition systems*	1	2
15.14	*Engine indication systems*	1	2
15.15	*Alternate turbine constructions*	—	1
15.16	*Turboprop engines*	1	2
15.17	*Turboshaft engines*	1	2
15.18	*Auxiliary power units (APUs)*	1	2
15.19	*Power plant installation*	1	2
15.20	*Fire protection systems*	1	2
15.21	*Engine monitoring and ground operation*	1	3
15.22	*Engine storage and preservation*	—	2

MODULE 16. PISTON ENGINE

MODULE 16. PISTON ENGINE		LEVEL	
		A2 A4	B1.2 B1.4 B3
16.1	*Fundamentals*	1	2
16.2	*Engine performance*	1	2
16.3	*Engine construction*	1	2
16.4	*Engine fuel systems*		
	16.4.1 *Carburettors*	1	2
	16.4.2 *Fuel injection systems*	1	2
	16.4.3 *Electronic engine control*	1	2
16.5	*Starting and ignition systems*	1	2

MODULE 16. PISTON ENGINE		LEVEL	
		A2 A4	B1.2 B1.4 B3
16.6	*Induction, exhaust and cooling systems*	1	2
16.7	*Supercharging/turbocharging*	1	2
16.8	*Lubricants and fuels*	1	2
16.9	*Lubrication systems*	1	2
16.10	*Engine indication systems*	1	2
16.11	*Power plant installation*	1	2
16.12	*Engine monitoring and ground operation*	1	3
16.13	*Engine storage and preservation*	—	2
16.14	*Alternative piston engine constructions*	1	1

MODULE 17. PROPELLER

MODULE 17. PROPELLER		LEVEL	
		A1 A2	B1.1 B1.2 B3
17.1	*Fundamentals*	1	2
17.2	*Propeller construction*	1	2
17.3	*Propeller pitch control*	1	2
17.4	*Propeller synchronising*	—	2
17.5	*Propeller ice protection*	1	2
17.6	*Propeller maintenance*	1	3
17.7	*Propeller storage and preservation*	1	2’

(b) the following point 3 is added:

‘3. **Basic training methods**

An appropriate training method, or combination of methods, shall be determined for the entire course or for each of its modules or submodules, with regard to the scope and objectives of each training phase and taking into consideration the benefits and limitations of the available training methods.

Multimedia-based training (MBT) methods may be used in order to achieve the training objectives either in a physically or in a virtually controlled environment.’;

(20) Appendix II is amended as follows:

(a) point 1.4 is replaced by the following:

‘1.4. Suitable essay questions shall be drafted and evaluated using the knowledge syllabus in Appendix I Module 7.’;

(b) points 1.11, 1.12 and 1.13 are replaced by the following:

‘1.11 An examination in a module may not be retaken earlier than 90 days following the date of a failed examination in that module, except in the case of a maintenance training organisation approved in accordance with Annex IV (Part-147) which delivers a course of retraining tailored to the failed subjects in the particular module; the failed module may be retaken after 30 days.

1.12. Basic knowledge examinations with a maximum allowed time of more than 90 or more than 180 minutes may be split in two or three partial exams respectively.

Each partial exam shall:

(a) be complementary to the other partial exam or exams taken by the candidate, ensuring that the combination of partial exams meets the examination requirements for the subject module;

(b) be of similar allowed time;

(c) be passed with 75 % or more of the questions answered correctly;

(d) contain a number of questions that is multiple of four;

(e) be listed on the same certificate of recognition issued after the last partial exam has been successfully passed. That certificate of recognition shall list the dates and the results of the partial exams – without averaging the results;

(f) be taken within the same organisation, following the normal examination provisions for retaking failed exams.

1.13. The maximum number of attempts for each examination is three in a 12-month period.

The applicant shall provide in a written statement to the approved maintenance training organisation or the competent authority to which they apply for an examination, the number, and dates of attempts during the 12 months preceding the examination, and the organisation or the competent authority where those attempts took place. The approved maintenance training organisation or the competent authority is responsible for checking the number of attempts within the applicable time frames.';

(c) the following point 1.14 is added:

'1.14 While it is accepted that the subject matter of the questions may be the same, the questions used as part of the MBT learning programme shall not be used in examinations.';

(d) point 2. is replaced by the following:

'2. **Number of questions per module**

2.1. MODULE 1 – MATHEMATICS

Category A: 16 multiple-choice, no essay questions.

Time allowed: 20 minutes.

Category B1, B2, B2L and B3: 32 multiple-choice, no essay questions.

Time allowed: 40 minutes.

2.2. MODULE 2 – PHYSICS

Category A and B3: 32 multiple-choice, no essay questions.

Time allowed: 40 minutes.

Category B1, B2 and B2L: 52 multiple-choice, no essay questions.

Time allowed: 65 minutes.

2.3. MODULE 3 – ELECTRICAL FUNDAMENTALS

Category A: 20 multiple-choice, no essay questions.

Time allowed: 25 minutes.

Category B3: 24 multiple-choice, no essay questions.

Time allowed: 30 minutes.

Category B1, B2 and B2L: 52 multiple-choice, no essay questions.

Time allowed: 65 minutes.

2.4. MODULE 4 —ELECTRONICS FUNDAMENTALS

Category B1 and B3: 20 multiple-choice, no essay questions.

Time allowed: 25 minutes.

Category B2 and B2L: 40 multiple-choice, no essay questions.

Time allowed: 50 minutes.

2.5. MODULE 5 – DIGITAL TECHNIQUES/ELECTRONIC INSTRUMENT SYSTEMS

Category A and B3: 20 multiple-choice, no essay questions.

Time allowed: 25 minutes.

Category B1: 40 multiple-choice, no essay questions.

Time allowed: 50 minutes.

Category B2 and B2L: 72 multiple-choice, no essay questions.

Time allowed: 90 minutes.

2.6. MODULE 6 – MATERIALS AND HARDWARE

Category A: 52 multiple-choice, no essay questions.

Time allowed: 65 minutes.

Category B1 and B3: 80 multiple-choice, no essay questions.

Time allowed: 100 minutes.

Category B2 and B2L: 60 multiple-choice, no essay questions.

Time allowed: 75 minutes.

2.7. MODULE 7 – MAINTENANCE PRACTICES

Category A: 76 multiple-choice and 2 essay questions.

Time allowed: 95 minutes plus 40 minutes.

Category B1 and B3: 80 multiple-choice and 2 essay questions.

Time allowed: 100 minutes plus 40 minutes.

Category B2 and B2L: 60 multiple-choice and 2 essay questions.

Time allowed: 75 minutes plus 40 minutes.

2.8. MODULE 8 – BASIC AERODYNAMICS

Category A, B3, B1, B2 and B2L: 24 multiple-choice, no essay questions.

Time allowed: 30 minutes.

2.9. MODULE 9 – HUMAN FACTORS

Category A, B1, B3, B2 and B2L: 28 multiple-choice, no essay questions.

Time allowed: 35 minutes.

2.10. MODULE 10 – AVIATION LEGISLATION

Category A: 32 multiple-choice, no essay questions.

Time allowed: 40 minutes.

Category B1, B3, B2 and B2L: 44 multiple-choice, no essay questions.

Time allowed: 55 minutes.

2.11. MODULE 11 AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS

Category A1: 108 multiple-choice, no essay questions.

Time allowed: 135 minutes.

Category A2: 72 multiple-choice, no essay questions.

Time allowed: 90 minutes.

Category B1.1: 140 multiple-choice, no essay questions.

Time allowed: 175 minutes.

Category B1.2: 100 multiple-choice, no essay questions.

Time allowed: 125 minutes.

Category B3: 60 multiple-choice, no essay questions.

Time allowed: 75 minutes.

2.12. MODULE 12 – HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS:

Category A: 100 multiple-choice, no essay questions.

Time allowed: 125 minutes.

Category B1.3 and B1.4: 128 multiple-choice, no essay questions.

Time allowed: 160 minutes.

2.13. MODULE 13 – AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS

Category B2: 188 multiple-choice, no essay questions.

Time allowed: 235 minutes.

Category B2L:

System rating	Number of multiple-choice questions	Time allowed (in minutes)
Basic requirements (Submodules 13.1, 13.2, 13.5 and 13.9)	32	40
COM/NAV (Submodule 13.4(a))	24	30
INSTRUMENTS (Submodule 13.8)	20	25
AUTOFLIGHT (Submodules 13.3 and 13.7)	28	35
SURVEILLANCE (Submodule 13.4(b))	20	25
AIRFRAME SYSTEMS (Submodules 13.11 to 13.19)	52	65

2.14. MODULE 14 – PROPULSION

Category B2 and B2L: 32 multiple-choice, no essay questions.

Time allowed: 40 minutes.

NOTE: The B2L examination for Module 14 is only applicable to the 'Instruments' and 'Airframe Systems' ratings.

2.15. MODULE 15 – GAS TURBINE ENGINE

Category A1 and A3: 60 multiple-choice, no essay questions.

Time allowed: 75 minutes.

Category B1.1 and B1.3: 92 multiple-choice, no essay questions.

Time allowed: 115 minutes.

2.16. MODULE 16 – PISTON ENGINE

Category A2 and A4: 52 multiple-choice, no essay questions.

Time allowed: 65 minutes.

Category B3, B1.2 and B1.4: 76 multiple-choice, no essay questions.

Time allowed: 95 minutes.

2.17. MODULE 17 – PROPELLER

Category A1 and A2: 20 multiple-choice, no essay questions.

Time allowed: 25 minutes.

Category B3, B1.1 and B1.2: 32 multiple-choice, no essay questions.

Time allowed: 40 minutes.';

(21) Appendix III is amended as follows:

(a) the title is replaced by the following:

'Appendix III Aircraft type training and type evaluation standard – on-the-job training (OJT)';

(b) point 1.(a)(ii) is replaced by the following:

'(ii) Shall comply with the standard set out in point 3.1 of this Appendix and, if existing, the elements defined in the operational suitability data (OSD) established in accordance with Regulation (EU) No 748/2012.';

(c) point 1.(b)(ii) is replaced by the following:

'(ii) Shall comply with the standard set out in point 3.2 of this Appendix and, if existing, the elements defined in the OSD established in accordance with Regulation (EU) No 748/2012.';

(d) point 1.(b)(iv) is replaced by the following:

'(iv) Shall include demonstrations using equipment, components, maintenance simulation training devices (MSTDs), maintenance training devices (MTDs), or real aircraft.';

(e) point 1.(c)(i) is replaced by the following:

'(i) Differences training is the training required to cover the training differences between:

(a) two different aircraft type ratings of the same manufacturer as determined by the Agency; or

(b) two different licence categories in respect of the same aircraft type rating.';

(f) the following point 1.(c)(iv) is added:

'(iv) the differences training shall have been started and completed within 3 years preceding the application for the new type rating in the same category (case (a)) or in another category (case (b)).';

(g) in point 3, the following paragraphs are added after the first paragraph:

'An appropriate training method, or combination of training methods, shall be determined for the entire course or for each of its parts with regard to the scope and objectives of each training phase and taking into consideration the benefits and limitations of the available training methods.

Multimedia-based training (MBT) methods may be used in order to achieve the training objectives either in a physically or in a virtually controlled environment.';