MODULE 1 — MATHÉMATIQUES — LICENCE B2					
Ref.	**Sous -item**	**Intitulé (FR)**	**Intitulé (EN)**	**Niv.**	**Contenu détaillé (EN)**
1.1	1.1	**Arithmétique**	Arithmetic	**2**	Arithmetical terms and signs, methods of multiplication and division, fractions and decimals, factors and multiples, weights, measures and conversion factors, ratio and proportion, averages and percentages, areas and volumes, squares, cubes, square and cube roots.
1.2	**1.2(a)**	**Algèbre — Expressions algébriques simples**	Algebra (a)	**2**	Evaluating simple algebraic expressions, addition, subtraction, multiplication and division, use of brackets, simple algebraic fractions.
1.2	**1.2(b)**	**Algèbre — Équations et logarithmes**	Algebra (b)	**1**	Linear equations and their solutions; indices and powers, negative and fractional indices; binary and other applicable numbering systems; simultaneous equations and second-degree equations with one unknown; logarithms.
1.3	**1.3(a)**	**Géométrie — Constructions géométriques simples**	Geometry (a)	**1**	Simple geometrical constructions.
1.3	**1.3(b)**	**Géométrie — Représentation graphique**	Geometry (b)	**2**	Graphical representation: nature and uses of graphs, graphs of equations/functions.
1.3	**1.3(c)**	**Géométrie — Trigonométrie**	Geometry (c)	**2**	Simple trigonometry: trigonometrical relationships, use of tables and rectangular and polar coordinates.

MODULE 2 — PHYSIQUE — LICENCE B2					
Ref.	**Sous -item**	**Intitulé (FR)**	**Intitulé (EN)**	**Niv.**	**Contenu détaillé (EN)**
2.1	2.1	**Matière**	Matter	**2**	Nature of matter: the chemical elements, structure of atoms, molecules; chemical compounds; states: solid, liquid, and gaseous; changes between states.
2.2.1	2.2.1	**Mécanique — Statique**	Statics	**2**	Forces, moments and couples, representation as vectors; centre of gravity; elements of theory of stress, strain, and elasticity: tension, compression, shear, and torsion; nature and properties of solid, fluid, and gas matter; pressure and buoyancy in liquids (barometers).
2.2.2	2.2.2	**Mécanique — Cinématique**	Kinetics	**2**	Linear movement: uniform motion in a straight line, motion under constant acceleration (motion under gravity); rotational movement: uniform circular motion (centrifugal/centripetal forces); periodic motion: pendular movement; simple theory of vibration, harmonics, and resonance; velocity ratio, mechanical advantage, and efficiency.
2.2.3	**2.2.3(a)**	**Dynamique — Masse, force et énergie**	Dynamics (a)	**2**	Mass; force, inertia, work, power, energy (potential, kinetic and total energy), heat, efficiency.
2.2.3	**2.2.3(b)**	**Dynamique — Quantité de mouvement**	Dynamics (b)	**2**	Momentum, conservation of momentum; impulse; gyroscopic principles; friction: nature and effects, coefficient of friction (rolling resistance).
2.2.4	**2.2.4(a)**	**Dynamique des fluides — Pesanteur et masse volumique**	Fluid dynamics (a)	**2**	Specific gravity and density.
2.2.4	**2.2.4(b)**	**Dynamique des fluides — Viscosité, compressibilité**	Fluid dynamics (b)	**2**	Viscosity, fluid resistance, effects of streamlining; effects of compressibility on fluids; static, dynamic, and total pressure: Bernoulli's Theorem, venturi.
2.3	**2.3(a)**	**Thermodynamique — Température**	Thermodynamics (a)	**2**	Temperature: thermometers and temperature scales (Celsius, Fahrenheit and Kelvin); definition of heat.
2.3	**2.3(b)**	**Thermodynamique — Chaleur**	Thermodynamics (b)	**2**	Heat capacity, specific heat; heat transfer: convection, radiation and conduction; volumetric expansion; first and second law of thermodynamics; gases: ideal gases laws, specific heat at constant volume and constant pressure, work done by expanding gas; isothermal, adiabatic expansion and compression, engine cycles, constant volume and constant pressure, refrigerators and heat pumps; latent heats of fusion and evaporation, thermal energy, heat of combustion.
2.4	2.4	**Optique (lumière)**	Optics (Light)	**2**	Nature of light; speed of light; laws of reflection and refraction: reflection at plane surfaces, reflection by spherical mirrors, refraction, lenses; fibre optics.
2.5	2.5	**Propagation des ondes et acoustique**	Wave motion and sound	**2**	Wave motion: mechanical waves, sinusoidal wave motion, interference phenomena, standing waves; sound: speed of sound, production of sound, intensity, pitch and quality, Doppler effect.

MODULE 3 — FONDAMENTAUX DE L'ÉLECTRICITÉ — LICENCE B2					
Ref.	**Sous -item**	**Intitulé (FR)**	**Intitulé (EN)**	**Niv.**	**Contenu détaillé (EN)**
3.1	3.1	**Théorie de l'électron**	Electron theory	**1**	Structure and distribution of electrical charges within atoms, molecules, ions, and compounds; molecular structure of conductors, semiconductors, and insulators.
3.2	3.2	**Électricité statique et conduction**	Static electricity and conduction	**2**	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 in vacuum.
3.3	3.3	**Terminologie électrique**	Electrical terminology	**2**	The following terms, their units and factors affecting them: potential difference, electromotive force, voltage, current, resistance, conductance, charge, conventional current flow, electron flow.
3.4	3.4	**Production d'électricité**	Generation of electricity	**1**	Production of electricity by the following methods: light, heat, friction, pressure, chemical reaction, magnetism, and motion.
3.5	3.5	**Sources d'électricité en courant continu**	Sources of DC electricity	**2**	Construction and basic chemical reaction of primary cells, secondary cells, lead acid cells, nickel cadmium cells, lithium cells, nickel cells and other alkaline cells; cells connected in series and in parallel; internal resistance and its effect on a battery; construction, materials, and operation of thermocouples; operation of photocells.
3.6	3.6	**Circuits en courant continu**	DC circuits	**2**	Ohm's law, Kirchhoff's voltage, and current laws; calculations using the above laws to find resistance, voltage, and current; significance of the internal resistance of a supply.
3.7	**3.7(a)**	**Résistance électrique**	Resistance	**2**	Specific resistance; calculation of total resistance using series, parallel and series-parallel combinations; operation and use of potentiometers and rheostats; operation of Wheatstone Bridge.
3.7	**3.7(b)**	**Résistances (composants)**	Resistor	**1**	Positive and negative temperature coefficient conductance; resistor colour code, values and tolerances, preferred values, wattage ratings; resistors in series and in parallel; fixed resistors, stability, tolerance and limitations, methods of construction; variable resistors, thermistors, voltage-dependent resistors; construction of potentiometers and rheostats; construction of Wheatstone Bridge.
3.8	3.8	**Puissance électrique**	Power	**2**	Power, work, and energy (kinetic and potential); dissipation of power by a resistor; power formula; calculations involving power, work, and energy.

3.9	3.9	**Capacité / condensateur**	Capacitance/ Capacitor	**2**	Operation and function of a capacitor; factors that affect the capacitance: area of plates, distance between plates, number of plates, dielectric and dielectric constant, working voltage, voltage rating; capacitor types, construction, and function; capacitor colour-coding; calculations of capacitance and voltage in series and in parallel circuits; exponential charge and discharge of a capacitor, time constants; testing of capacitors.
3.10	**3.10(a)**	**Magnétisme — Théorie du magnétisme**	Magnetism (a)	**2**	Theory of magnetism; properties of a magnet; action of a magnet suspended in the Earth's magnetic field; magnetisation and demagnetisation; magnetic shielding; various types of magnetic material; electromagnet construction and principles of operation; handclasp rules to determine magnetic field around current-carrying conductor.
3.10	**3.10(b)**	**Magnétisme — Force magnétomotrice**	Magnetism (b)	**2**	Magnetomotive force, field strength, magnetic flux density, permeability, hysteresis loop, retentivity, coercive force reluctance, saturation point, eddy currents; precautions for care and storage of magnets.
3.11	3.11	**Inductance / inducteur**	Inductance/ Inductor	**2**	Faraday's law; action of inducing a voltage in a conductor that moves in a magnetic field; induction principles; effects of the following on the magnitude of an induced voltage: magnetic field strength, rate of change of flux, number of conductor turns; mutual induction; the effect that the rates of change of primary current and mutual inductance have on induced voltage; factors that affect mutual inductance: number of turns in the coil, physical size of the coil, permeability of the coil, position of coils with respect to each other; Lenz's law and polarity determining rules; back EMF, self-induction; saturation point; principal uses of inductors.
3.12	3.12	**Théorie des moteurs et générateurs DC**	DC motor/generator theory	**2**	Basic motor and generator theory; construction and purpose of components in a DC generator; operation of and factors that affect the output and direction of the current in DC generators; operation of and factors that affect the output power, torque, speed, and direction of rotation of DC motors; series-wound, shunt-wound and compound motors; starter generator construction.
3.13	3.13	**Théorie du courant alternatif**	AC theory	**2**	Sinusoidal waveform: phase, period, frequency, cycle; instantaneous, average, root mean square, peak, peak-to-peak current values and calculations of these values in relation to voltage, current and power; triangular/square waves; single-phase/three-phase principles.
3.14	3.14	**Circuits R, C et L**	Resistive (R), capacitive (C) and inductive (L) circuits	**2**	Phase relationship of voltage and current in L, C and R circuits, parallel, series and series-parallel; power dissipation in L, C and R circuits; impedance, phase angle, power factor and current calculations; true power, apparent power, and reactive power calculations.
3.15	3.15	**Transformateurs**	Transformers	**2**	Transformer construction principles and operation; transformer losses and methods for overcoming them; transformer action under load and no-load conditions; power transfer, efficiency, polarity markings; line and phase voltages and currents; power in a three-phase system; primary and secondary current, voltage, turn ratio, power, efficiency; auto-transformers.

3.16	3.16	**Filtres**	Filters	**1**	Operation, application, and uses of the following filters: low pass, high pass, band pass, band stop.
3.17	3.17	**Alternateurs (générateurs CA)**	AC generators	**2**	Rotation of loop in a magnetic field and waveform produced; 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 connection advantages, and uses; permanent magnet generators.
3.18	3.18	**Moteurs à courant alternatif**	AC motors	**2**	Construction, principles of operation and characteristics of: AC synchronous and induction motors both single-phase and polyphase; methods of speed control and direction of rotation; methods of producing a rotating field: capacitor, shaded or split pole.

MODULE 4 — FONDAMENTAUX DE L'ÉLECTRONIQUE — LICENCE B2

Ref.	Sous-item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
4.1.1	**4.1.1(a)**	**Semi-conducteurs — Diodes : description et caractéristiques**	Diodes - Description and characteristics	**2**	Diode symbols; diode characteristics and properties; diodes in series and in parallel; materials, electron configuration, electrical properties; P and N type materials: effects of impurities on conduction, majority and minority characters; P-N junction in a semiconductor, development of a potential across a P-N junction in unbiased, forward-biased and reverse-biased conditions; diode parameters: peak inverse voltage, maximum forward current, temperature, frequency, leakage current, power dissipation; main characteristics and use of silicon-controlled rectifiers (thyristors), light-emitting diodes (LEDs), photo-conductive diodes, rectifier diodes.
4.1.1	**4.1.1(b)**	**Semi-conducteurs — Diodes : fonctionnement**	Diodes - Operation and function	**2**	Operation and function of diodes in the following circuits: clippers, clampers, full- and half-wave rectifiers, bridge rectifiers, voltage doublers and triplers; detailed operation and characteristics of the following devices: silicon-controlled rectifier (thyristor), light-emitting diode (LED), Schottky diode, photo-conductive diode, varactor diode, varistor, rectifier diodes, Zener diode. Functional testing of diodes.
4.1.2	**4.1.2(a)**	**Semi-conducteurs — Transistors : description et caractéristiques**	Transistors - Description and characteristics	**2**	Transistor symbols; component description and orientation; transistor characteristics and properties.
4.1.2	**4.1.2(b)**	**Semi-conducteurs — Transistors : construction et fonctionnement**	Transistors - Construction and operation	**2**	Construction and operation of PNP and NPN transistors; base, collector and emitter configurations; testing of transistors; basic appreciation of other transistor types, including types of FET and their uses; application of transistors: amplifier classes (A, B, C); simple circuits including bias, decoupling, feedback and stabilisation; multistage circuit principles: cascades, push-pull, oscillators, multivibrators, flip-flop circuits; operation and amplifier stages connecting methods: resistive, capacitive, direct, inverting, non-inverting and adding.
4.1.3	**4.1.3(a)**	**Circuits intégrés — Description et fonctionnement**	Integrated circuits (a)	**2**	Description and operation of logic circuits and linear circuits/operational amplifiers.

4.1.3	**4.1.3(b)**	**Circuits intégrés — Amplificateur opérationnel**	Integrated circuits (b)	**2**	Introduction to the operation and function of an operational amplifier used as: an integrator, a differentiator, a voltage follower, a comparator; advantages and disadvantages of positive and negative feedback.
4.2	4.2	**Circuits imprimés**	Printed circuit boards	**2**	Description and use of printed circuit boards.
4.3	**4.3(a)**	**Servomécanismes — Principes**	Servomechanisms (a)	**2**	Understanding of the following principles: open- and closed-loop systems, servomechanism, feedback, follow-up, null, overshoot, damping, deadband, hunting, proximity switches, analogue transducers, synchro systems and components, digital tachometers and encoders, inductance, and capacitance transmitters.
4.3	**4.3(b)**	**Servomécanismes — Construction et utilisation**	Servomechanisms (b)	**2**	Construction operation and use of the following synchro-system components: resolvers, differential, control and torque, E and I transformers, inductance transmitters, capacitance transmitters, synchronous transmitters; construction, operation and use of servomechanism and PID controller; fault-finding of servo defects, reversal of synchro leads, hunting.

MODULE 5 — TECHNIQUES NUMÉRIQUES — LICENCE B2

Ref.	Sous -item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
5.1	5.1	**Systèmes d'instruments électroniques**	Electronic instrument systems	**1**	Typical arrangements of systems and cockpit layout of electronic instrument systems.
5.2	5.2	**Systèmes de numération**	Numbering systems	**2**	Numbering systems: binary, octal, and hexadecimal; demonstration of conversions between the decimal and binary systems, octal and hexadecimal systems and vice versa.
5.3	5.3	**Conversion de données**	Data conversion	**2**	Analogue data, digital data; operation and application of analogue-to-digital and digital-to-analogue converters, inputs and outputs, limitations of various types.
5.4	5.4	**Bus de données**	Data buses	**2**	Operation of data buses in aircraft systems, including knowledge of ARINC and other specifications. Aircraft network/Ethernet.
5.5	**5.5(a)**	**Circuits logiques — Identification et applications**	Logic circuits (a)	**2**	Identification of common logic gate symbols, tables and equivalent circuits; applications used for aircraft systems, schematic diagrams.
5.5	**5.5(b)**	**Circuits logiques — Interprétation**	Logic circuits (b)	**2**	Interpretation of logic diagrams.

5.6	**5.6(a)**	**Architecture informatique — Terminologie et technologie**	Basic computer structure (a)	**2**	Computer terminology (including bit, byte, software, hardware, CPU, IC, and various memory devices such as RAM, ROM, PROM); computer technology (as applied in aircraft systems).
5.6	**5.6(b)**	**Architecture informatique — Fonctionnement**	Basic computer structure (b)	**2**	Computer operation, layout, and interface of the major components in a microcomputer, including their associated bus systems; information contained in single- and multi-address instruction words; memory-associated terms; operation of typical memory devices; operation, advantages, and disadvantages of the various data storage systems.
5.7	5.7	**Microprocesseurs**	Microprocessors	**2**	Functions performed and overall operation of a microprocessor; basic operation of each of the following microprocessor elements: control and processing unit, clock, register, arithmetic logic unit.
5.8	5.8	**Circuits intégrés**	Integrated circuits	**2**	Operation and use of encoders and decoders; function of encoder types.
5.9	5.9	**Multiplexage**	Multiplexing	**2**	Operation, application and identification in logic diagrams of multiplexers and demultiplexers.
5.10	5.10	**Fibres optiques**	Fibre optics	**2**	Advantages and disadvantages of fibre 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.
5.11	5.11	**Afficheurs électroniques**	Electronic displays	**2**	Principles of operation of common types of displays used in modern aircraft, including cathode-ray tubes (CRTs), light-emitting diodes (LEDs) and liquid crystal displays (LCDs).
5.12	5.12	**Dispositifs sensibles aux décharges électrostatiques**	Electrostatic-sensitive devices	**2**	Special handling of components sensitive to electrostatic discharges; awareness of risks and possible damage, component, and personnel antistatic protection devices.
5.13	5.13	**Gestion et contrôle des logiciels**	Software management control	**2**	Awareness of restrictions, airworthiness requirements and possible catastrophic effects of unapproved changes to software programs.
5.14	5.14	**Environnement électromagnétique**	Electromagnetic environment	**2**	Influence of the following phenomena on maintenance practices for electronic systems: EMC — Electromagnetic Compatibility, EMI — Electromagnetic Interference, HIRF — High-Intensity Radiated Field, lightning / lightning protection.

5.15	5.15	**Systèmes aéronefs électroniques/numériques typiques**	Typical electronic/digital aircraft systems	**1**	General arrangement of typical electronic/digital aircraft systems and associated BITE (Built-In Test Equipment), such as: ACARS, FBW — Fly-by-Wire, FMS — flight management system, IRS — inertial reference system; ECAM, EICAS, EFIS, GNSS, TCAS, Integrated Modular Avionics, Cabin Systems, Information Systems.

MODULE 6 — MATÉRIAUX ET QUINCAILLERIE — LICENCE B2

Ref.	Sous-item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
6.1	**6.1(a)**	**Matériaux ferreux — Aciers alliés**	Ferrous materials (a)	**1**	Characteristics, properties and identification of common alloy steels used in aircraft; heat treatment and application of alloy steels.
6.1	**6.1(b)**	**Matériaux ferreux — Essais mécaniques**	Ferrous materials (b)	**1**	Testing of ferrous materials for hardness, tensile strength, fatigue strength and impact resistance.
6.1	**6.1(c)**	**Matériaux ferreux — Procédures de réparation et d'inspection**	Ferrous materials (c)	**1**	Repair and inspection procedures for ferrous materials, structures, and airframes.
6.2	**6.2(a)**	**Matériaux non ferreux — Caractéristiques**	Non-ferrous materials (a)	**1**	Characteristics, properties and identification of common non-ferrous materials used in aircraft; heat treatment and application of non-ferrous materials.
6.2	**6.2(b)**	**Matériaux non ferreux — Essais mécaniques**	Non-ferrous materials (b)	**1**	Testing of non-ferrous material for hardness, tensile strength, fatigue strength and impact resistance.
6.2	**6.2(c)**	**Matériaux non ferreux — Procédures de réparation et d'inspection**	Non-ferrous materials (c)	**1**	Repair and inspection procedures for non-ferrous materials, structures, and airframes.
6.3.1	**6.3.1(a)**	**Matériaux composites — Caractéristiques**	Composite materials (a)	**2**	Characteristics, properties and identification of common composite and non-metallic materials, other than wood, used in aircraft; sealant and bonding agents.
6.3.1	**6.3.1(b)**	**Matériaux composites — Détection des défauts**	Composite materials (b)	—	Detection of defects/deterioration in composite and non-metallic materials.
6.3.1	**6.3.1(c)**	**Matériaux composites — Réparation et inspection**	Composite materials (c)	**1**	Repair of and inspection procedures for composite and non-metallic materials, structures, and airframes.

6.3.2	6.3.2	**Structures en bois**	Wooden structures	—	Construction methods of wooden airframe structures; characteristics, properties and types of wood and glue used in aeroplanes; preservation and maintenance of wooden structures; types of defects in wood material and wooden structures; detection of defects in wooden structures; repair of wooden structures.
6.3.3	6.3.3	**Revêtement en tissu**	Fabric covering	—	Characteristics, properties and types of fabrics used in aeroplanes; inspection methods for fabrics; types of defects in fabrics; repair of fabric covering.
6.4	**6.4(a)**	**Corrosion — Fondamentaux chimiques**	Corrosion (a)	**1**	Chemical fundamentals; formation by galvanic action process, microbiological contamination, mechanical stress.
6.4	**6.4(b)**	**Corrosion — Types de corrosion**	Corrosion (b)	**2**	Types of corrosion and their identification; causes of corrosion; material types, and their susceptibility to corrosion.
6.5.1	6.5.1	**Fixations — Filetages**	Screw threads	**2**	Screw nomenclature; thread forms, dimensions and tolerances for standard threads used in aircraft; measuring screw threads.
6.5.2	6.5.2	**Fixations — Boulons, goujons et vis**	Bolts, studs, and screws	**2**	Bolt types: specification, identification and marking of aircraft bolts, international standards; nuts: self-locking, anchor, standard types; machine screws: aircraft specifications; studs: types and uses, insertion, and removal; self-tapping screws, dowels.
6.5.3	6.5.3	**Fixations — Dispositifs de freinage**	Locking devices	**2**	Tab and spring washers, locking plates, split pins, pal-nuts, wire locking, quick-release fasteners, keys, circlips, cotter pins.
6.5.4	6.5.4	**Fixations — Rivets aéronautiques**	Aircraft rivets	**1**	Types of solid and blind rivets: specifications and identification, heat treatment.
6.6	**6.6(a)**	**Tuyauteries et raccords — Identification**	Pipes and unions (a)	**2**	Identification and types of rigid and flexible pipes and their connectors used in aircraft.
6.6	**6.6(b)**	**Tuyauteries et raccords — Raccords normalisés**	Pipes and unions (b)	**2**	Standard unions for aircraft hydraulic, fuel, oil, pneumatic and air system pipes.
6.7	6.7	**Ressorts**	Springs	**2**	Types of springs, materials, characteristics, and applications.

6.8	6.8	**Roulements**	Bearings	**2**	Purpose of bearings, loads, material, construction; types of bearings and their application.
6.9	6.9	**Transmissions mécaniques**	Transmissions	**2**	Gear types and their application; gear ratios, reduction and multiplication gear systems, driven and driving gears, idler gears, mesh patterns; belts and pulleys, chains and sprockets.
6.10	6.10	**Câbles de commande**	Control cables	**1**	Types of cables; end fittings, turnbuckles and compensation devices; pulleys and cable system components; Bowden cables; aircraft flexible control systems.
6.11	6.11	**Câbles électriques et connecteurs**	Electrical cables and connectors	**2**	Cable types, construction and characteristics; high-tension and coaxial cables; crimping; connector types, pins, plugs, sockets, insulators, current and voltage rating, coupling, identification codes.

MODULE 7 — PRATIQUES DE MAINTENANCE — LICENCE B2

Ref.	Sous-item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
7.1	7.1	**Précautions de sécurité — Aéronef et atelier**	Safety precautions	**3**	Aspects of safe working practices including precautions to be taken when working with electricity, gases (especially oxygen), oils, and chemicals. Fuel tank safety and fuel tank entry procedures and precautions. Awareness and precautions regarding aircraft equipped with ballistic recovery systems. Also, instructions for the remedial action to be taken in the event of a fire or another accident with one or more of these hazards, including information on fire-extinguishing agents.
7.2	7.2	**Pratiques d'atelier**	Workshop practices	**3**	Care of tools, control of tools, use of workshop materials; dimensions, allowances and tolerances, workmanship standards; calibration of tools and equipment, calibration standards.
7.3	7.3	**Outillage**	Tools	**3**	Common hand-tool types; common power-tool types; operation and use of precision-measuring tools; lubrication equipment and methods; operation, function, and use of electrical general test equipment.
7.4	7.4	Potential safety hazards when working with electrical systems and protective equipment		**3**	Potential safety hazards when working with electrical systems and protective equipment Electric shock hazards and effects of current on the human body Arc flash, arc blast, and stored energy hazards (capacitors, batteries, power electronics) Battery-related hazards: chemical, thermal runaway, fire and explosion risks Electrostatic discharge (ESD) and electromagnetic hazards

b2	7.5	**Dessins techniques, schémas et normes**	Engineering drawings, diagrams, and standards	**2**	Drawing types and diagrams, their symbols, dimensions, tolerances and projections; identification of 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.
7.6	7.6	**Ajustements et jeux fonctionnels**	Fits and clearances	**2**	Drill sizes for bolt holes, classes of fits; common system for fits and clearances; schedule of fits and clearances for aircraft and engines; limits for bow, twist and wear; standard methods for checking shafts, bearings, and other parts.
7.7	7.7	**Système d'interconnexion du câblage électrique (EWIS)**	Electrical wiring interconnection system (EWIS)	**3**	Continuity, insulation and bonding techniques and testing; use of crimp tools: hand and hydraulic operated; testing of crimp joints; connector pin removal and insertion; coaxial cables: testing and installation precautions; identification of wire types, their inspection criteria and damage tolerance; wiring protection techniques: cable looming and loom support, cable clamps, protective sleeving techniques including heat shrink wrapping, shielding; High-Intensity Radiated Fields (HIRF) and protection principles; soldering of electrical wires, EWIS installations, inspection, repair, maintenance, and cleanliness standards.
7.8	7.8	**Rivetage**	Riveting	—	Riveted joints, rivet spacing and pitch; tools used for riveting and dimpling; inspection of riveted joints.
7.9	7.9	**Tuyaux et flexibles**	Pipes and hoses	—	Bending and belling/flaring aircraft pipes; inspection and testing of aircraft pipes and hoses; installation and clamping of pipes.
7.10	7.10	**Ressorts**	Springs	—	Inspection and testing of springs.
7.11	7.11	**Roulements**	Bearings	—	Testing, cleaning and inspection of bearings; lubrication requirements for bearings; defects in bearings and their causes.
7.12	7.12	**Transmissions mécaniques**	Transmissions	—	Inspection of gears, backlash; inspection of belts and pulleys, chains and sprockets; inspection of screw jacks, lever devices, push-pull rod systems.
7.13	7.13	**Câbles de commande**	Control cables	—	Swaging of end fittings; inspection and testing of control cables; Bowden cables; aircraft flexible control systems.
7.14.1	7.14.1	**Travail de la tôle**	Sheet metal	—	Marking out and calculation of bend allowance; sheet metal working, including bending and forming; inspection of sheet metal work.

7.14.2	7.14.2	**Matériaux composites et non métalliques**	Composite and non-metallic	—	Bonding practices; environmental conditions; inspection methods.
7.14.3	7.14.3	**Fabrication additive**	Additive manufacturing	**1**	Common additive manufacturing techniques and their influence on the mechanical properties of the finished part; inspection of additive manufactured parts and common production failures.
7.16	**7.16(a)**	**Masse et centrage — Calcul du centre de gravité**	Aircraft weight and balance (a)	**2**	Calculation of centre-of-gravity / balance limits: use of relevant documents.
7.16	**7.16(b)**	**Masse et centrage — Pesée de l'aéronef**	Aircraft weight and balance (b)	—	Preparation of aircraft for weighing; aircraft weighing.
7.17	7.17	**Manutention et stockage des aéronefs**	Aircraft handling and storage	**2**	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.
7.18	**7.18(a)**	**Inspection — Types de défauts et inspection visuelle**	Disassembly/ inspection techniques (a)	**3**	Types of defects and visual inspection techniques; corrosion removal, assessment and reprotection.
7.18	**7.18(b)**	**Méthodes générales de réparation — SRM**	Disassembly/ inspection techniques (b)	—	General repair methods, structural repair manual; ageing, fatigue, and corrosion control programmes.
7.18	**7.18(c)**	**Contrôles non destructifs (CND)**	Non-destructive inspection (c)	**1**	Non-destructive inspection techniques including penetrant, radiographic, eddy current, magnetic particle, ultrasonic and borescope inspections; including practical training in colour contrast penetrant inspection.
7.18	**7.18(d)**	**Techniques de démontage et de remontage**	Disassembly/ reassembly techniques (d)	**2**	Disassembly and reassembly techniques.
7.18	**7.18(e)**	**Techniques de dépannage (troubleshooting)**	Troubleshooting techniques (e)	**2**	Troubleshooting techniques.
7.19	**7.19(a)**	**Événements anormaux — Foudre et HIRF**	Abnormal events (a)	**2**	Inspections following lightning strikes and HIRF penetration.

7.19	**7.19(b)**	**Événements anormaux — Atterrissage dur et turbulences**	Abnormal events (b)	**2**	Inspections following abnormal events such as heavy landings and flight through turbulence.
7.20	7.20	**Procédures de maintenance**	Maintenance procedures	**2**	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.
7.21	7.21	**Documentation et communication**	Documentation and communication	**2**	Documentation: elements and criteria for writing work reports, troubleshooting reports, and shift handover instructions. Communication: clear, comprehensive, and concise.

MODULE 8 — AERODYNAMIQUE — LICENCE B2

Ref.	Sous-item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
8.1	8.1	**Physique de l'atmosphère — ISA**	Physics of the atmosphere	**2**	International Standard Atmosphere (ISA), and its application to aerodynamics.
8.2	8.2	**Aérodynamique**	Aerodynamics	**2**	Airflow around a body; boundary layer, laminar and turbulent flow, free stream flow, relative airflow, upwash and downwash, vortices, stagnation; the terms: camber, chord, mean aerodynamic chord, profile (parasite) drag, induced drag, centre of pressure, angle of attack, wash-in and wash-out, fineness ratio, wing shape and aspect ratio; thrust, weight, aerodynamic resultant; generation of lift and drag: angle of attack, lift coefficient, drag coefficient, polar curve, stall; aerofoil contamination including ice, snow, and frost.
8.3	8.3	**Théorie du vol**	Theory of flight	**2**	Relationship between lift, weight, thrust and drag; glide ratio; steady-state flights, performance; theory of the turn; influence of load factor: stall, flight envelope, and structural limitations; lift augmentation.
8.4	8.4	**Écoulement à grande vitesse**	High-speed airflow	**2**	Speed of sound, subsonic flight, transonic flight, supersonic flight, Mach number, critical Mach number, compressibility buffet, shock wave, aerodynamic heating, area rule; factors that affect airflow in engine intakes of high-speed aircraft; effects of sweepback on critical Mach number.
8.5	8.5	**Stabilité et dynamique du vol**	Flight stability and dynamics	**2**	Longitudinal, lateral, and directional stability (active and passive).

MODULE 9 — FACTEURS HUMAINS — LICENCE B2

Ref.	Sous-item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)

9.1	9.1	**Généralités**	General	**2**	The need to take human factors into account when performing maintenance; incidents attributable to human factors/human error; Murphy's law.
9.2	9.2	**Performances et limitations humaines**	Human performance and limitations	**2**	Vision; hearing; information processing; attention and perception; memory; claustrophobia and physical access.
9.3	9.3	**Psychologie sociale**	Social psychology	**1**	Accountability and responsibility: individual and group; motivation and demotivation; peer pressure; cultural issues; teamwork; management, supervision, and leadership.
9.4	9.4	**Facteurs influençant les performances**	Factors that affect performance	**2**	Fitness/health; stress: domestic and work related; time pressure and deadlines; workload: overload, underload, and workload management; sleep and fatigue, shift work; alcohol, medication, drug abuse; lack of manpower.
9.5	9.5	**Environnement physique**	Physical environment	**1**	Noise and fumes; illumination; climate and temperature; motion and vibration; working environment; situational awareness.
9.6	9.6	**Tâches**	Tasks	**1**	Physical work; repetitive tasks, complacency; visual inspection; complex systems; critical maintenance tasks and error-capturing methods; technical documentation: access, use, and quality.
9.7	9.7	**Communication**	Communication	**2**	Within and between teams; work logging and recording; shift handover; keeping up to date, currency; dissemination of information.
9.8	9.8	**Erreur humaine**	Human error	**2**	Error models and theories; types of error in maintenance tasks; implications of errors (e.g. accidents); organisational errors; avoiding and managing errors.
9.9	9.9	**Gestion de la sécurité**	Safety management	**2**	Risk management; occurrence reporting; safety culture; just culture; identifying, avoiding, and reporting hazards; organisational human-factors programme: professionalism and integrity, error-provoking behaviour, reporting errors, disciplinary policy, error investigation, action to address problems, feedback, assertiveness; dealing with emergencies.
9.10	9.10	**La 'Sale Douzaine' (Dirty Dozen) et atténuation des risques**	The 'Dirty Dozen' and risk-mitigation	**2**	The 'Dirty Dozen': the twelve most common human-factors errors in maintenance: lack of communication, lack of teamwork, lack of assertiveness, complacency, fatigue, stress, lack of knowledge, lack of resources, lack of awareness, distraction, pressure, norms. Risk-mitigation methods.

MODULE 10 — LÉGISLATION AÉRONAUTIQUE — LICENCE B2					
Ref.	**Sous -item**	**Intitulé (FR)**	**Intitulé (EN)**	**Niv.**	**Contenu détaillé (EN)**
10.1	10.1	**Cadre réglementaire**	Regulatory framework	**1**	Role of: the International Civil Aviation Organization (ICAO); the European Commission (EC); the European Union Aviation Safety Agency (EASA); the European Union Member States and national aviation authorities; the bilateral agreements concluded by the European Commission; Regulation (EU) 2018/1139 (the Basic Regulation) and its implementing acts: Regulations (EU) No 748/2012 (Initial Airworthiness) and (EU) No 1321/2014 (Continuing Airworthiness); the relationship between regulations (hard law) and AMC, GM and CSs (soft law); occurrence reporting according to Regulation (EU) No 376/2014; the relationship between the various annexes (parts) relating to Initial and Continuing Airworthiness (such as Part 21, Part-M, Part-145, Part-66, Part-147, Part-T, Part-ML, Part-CAMO, and Part-CAO) and Regulations (EU) No 965/2012 (the Air Operations Regulation) and (EU) No 1178/2011 (the Air Crew Regulation).
10.2	10.2	**Personnel de certification — Maintenance**	Certifying staff — maintenance	**2**	Deep understanding of Part-66 maintenance licences with the associated privileges and authorisations, and how to exercise them properly for the different aircraft categories.
10.3	10.3	**Organismes d'entretien agréés (OEA / Part-145)**	Approved maintenance organisations	**2**	General understanding of Part-145 and Part-CAO.
10.4	10.4	**Personnel de certification indépendant**	Independent certifying staff	3	Privileges, responsibilities, record-keeping, limitations, and oversight according to Part-M, Part-66 and Part-ML.
10.5	10.5	**Opérations aériennes**	Air operations	**1**	General understanding of Regulation (EU) No 965/2012 (the Air Operations Regulation); differences between commercial and non-commercial air operations, and their influence on aircraft maintenance; Air Operator Certificates (AOCs) and self-declaration authorisations; air operator responsibilities, in particular regarding continuing airworthiness and maintenance; specialised operations / specific approvals: ETOPS, CAT I/II/III, and BRNAV. Minimum Equipment List (MEL) and Configuration Deviation List (CDL); aircraft placarding and markings; documents to be carried on board.
10.6	10.6	**Certification des aéronefs, pièces et équipements**	Certification of aircraft, parts, and appliances	**2**	Basic understanding of Part 21 and of the following EASA certification specifications: CS-22, CS-23, CS-25, CS-27, CS-29, and CS-STAN.
10.7	10.7	**Maintien de la navigabilité**	Continuing airworthiness	**2**	General understanding of the Part 21 requirements on continuing airworthiness; general understanding of Part-M, Part-ML and Part-CAMO; Aircraft Maintenance Programme.

10.8	10.8	**Principes de surveillance du maintien de la navigabilité**	Oversight principles in continuing airworthiness	**1**	Oversight principles in continuing airworthiness.
10.9	10.9	**Maintenance et certification hors réglementation UE**	Maintenance beyond current EU regulations	1	Maintenance of European Union aircraft that are not within the scope of Regulation (EU) 2018/1139 (Annex I aircraft); European military airworthiness requirement (EMAR) 66 licence; applicable national and international requirements for component maintenance, welding, painting, NDT, etc. (if not superseded by EU requirements)
10.10	10.10	**Cybersécurité en maintenance aéronautique**	Cybersecurity in aviation maintenance	**1**	Regulation on the introduction of organisation requirements for the management of information security risks related to aeronautical information systems used in civil aviation.

MODULE 13 — AIRCRAFT AERODYNAMICS, STRUCTURES / SYSTEMS — LICENCE B2

Ref.	Sous -item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
13.1	**13.1(a)**	**Théorie du vol — Aérodynamique de l'avion et commandes de vol**	Theory of flight (a) - Aeroplane	**1**	Operation and effect of: roll control: ailerons and spoilers; pitch control: elevators, stabilators, variable incidence stabilisers and canards; yaw control: rudder limiters; control using elevons, ruddervators; high-lift devices: slots, slats, flaps; drag-inducing devices: spoilers, lift dumpers, speed brakes; trim tabs, servo tabs, and control surface bias.
13.1	**13.1(b)**	**Théorie du vol — Aérodynamique du rotor**	Theory of flight (b) - Rotary wing	**1**	Terminology; operation and effect of cyclic, collective, and antitorque controls.
13.2	**13.2(a)**	**Structures — Concepts généraux**	Structures - General concepts (a)	**2**	General concepts; zonal and station identification systems; electrical bonding; lightning strike protection provisions.
13.2	**13.2(b)**	**Structures — Systèmes structuraux fondamentaux**	Structures - Fundamentals (b)	**1**	Fundamentals of structural systems.
13.3	**13.3(a)**	**Pilotage automatique (ATA 22) — Commande automatique de vol**	Autoflight (a) - Automatic flight control	**3**	Working principles and current terminology; command signal processing; modes of operation: roll, pitch, and yaw channels; yaw dampers; stability augmentation system in helicopters; automatic trim control; autopilot navigation aids interface.
13.3	**13.3(b)**	**Pilotage automatique (ATA 22) — Systèmes d'atterrissage automatique**	Autoflight (b) - Autothrottle and automatic landing	**3**	Principles and categories; modes of operation; approach; glideslope; land, go-around; system monitors and failure conditions.
13.4	**13.4(a)**	**Communication / Navigation (ATA 23/34) — Fondamentaux**	Communication/ navigation (a)	**3**	Radio wave propagation, antennas, transmission lines, communication, receiver, and transmitter. Working principles of: VHF/HF communications, SATCOM, CPDLC, audio systems, ELTs, CVR, VOR, ADF, ILS, FDS/DME, RNAV, FMS, GNSS/GPS/GBAS/SBAS, data link and two-way data link.

13.4	**13.4(b)**	**Communication / Navigation (ATA 23/34) — Systèmes de surveillance**	Communication/ navigation (b) - Surveillance	**3**	ATC transponder, secondary surveillance radar; TCAS; weather avoidance radar; radio altimeter; ADS-B and associated services (FIS-B, TIS-B and multilink); INS; ARINC communication and reporting.
13.5	13.5	**Alimentation électrique (ATA 24)**	Electric power (ATA 24)	**3**	Installation and operation of batteries; DC power generation; AC power generation; emergency power generation; voltage regulation; power distribution; inverters, transformers, rectifiers; circuit protection; external/ground power.
13.6	13.6	**Équipements et aménagements (ATA 25)**	Equipment and furnishings (ATA 25)	**3**	Electronic emergency equipment requirements.
13.7	**13.7(a)**	**Commandes de vol (ATA 27) — Commandes primaires et secondaires**	Flight controls (a)	**2**	Primary controls: aileron, elevator, rudder, spoiler; trim control: trim tabs; high-lift devices; system operation: manual; gust locks and gust lock systems; artificial feel, yaw damper, Mach trim, rudder limiter; stall-warning systems.
13.7	**13.7(b)**	**Commandes de vol (ATA 27) — Actionnement et protection**	Flight controls (b)	**2**	Active load control; lift dump, speed brakes; hydraulic, pneumatic systems; stall-protection systems.
13.7	**13.7(c)**	**Commandes de vol (ATA 27) — Fonctionnement électrique / FBW**	Flight controls (c) - System operation	**3**	System operation: electrical, fly-by-wire.
13.7	**13.7(d)**	**Commandes de vol — Commandes giravion (ATA 67)**	Flight controls (d) - Rotorcraft	**2**	Rotorcraft controls: cyclic control, collective control, swashplate, yaw control.
13.8	13.8	**Instruments (ATA 31)**	Instruments (ATA 31)	**3**	Classification; atmosphere; terminology; pressure-measuring devices and systems; pitot-static systems; altimeters; vertical speed indicators; airspeed indicators; Machmeters; altitude-reporting/-alerting systems; air-data computers; instrument pneumatic systems; direct-reading pressure and temperature gauges; temperature-indicating
13.9	13.9	**Éclairage (ATA 33)**	Lights (ATA 33)	**3**	External: navigation, anticollision, landing, taxiing, ice; internal: cabin, cockpit, cargo; emergency.
13.10	13.10	**Systèmes de maintenance embarqués (ATA 45)**	Onboard maintenance systems (ATA 45)	**3**	Central maintenance computers; data-loading system; electronic library system; printing system; structure monitoring system (damage-tolerance monitoring).
13.11	**13.11(a)**	**Conditionnement d'air et pressurisation (ATA 21) — Pressurisation**	Air conditioning (a)	**3**	Pressurisation systems; cabin pressure controllers, control and safety valves; control and indication.

13.11	**13.11(b)**	**Conditionnement d'air et pressurisation (ATA 21) — Alimentation en air**	Air conditioning (b)	**1**	Sources of air supply including engine bleed, APU and ground cart; distribution systems.
13.11	**13.11(c)**	**Conditionnement d'air et pressurisation (ATA 21) — Climatisation**	Air conditioning (c)	**3**	Air conditioning.
13.11	**13.11(d)**	**Conditionnement d'air et pressurisation (ATA 21) — Sécurité et alarmes**	Air conditioning (d)	**3**	Safety and warning devices.
13.12	**13.12(a)**	**Protection incendie (ATA 26) — Détection et extinction**	Fire protection (a)	**3**	Fire and smoke detection and warning systems; fire-extinguishing systems; system tests.
13.12	**13.12(b)**	**Protection incendie (ATA 26) — Extincteurs portatifs**	Fire protection (b)	**1**	Portable fire extinguisher.
13.13	**13.13(a)**	**Systèmes carburant (ATA 28/47) — Architecture**	Fuel systems (a)	**1**	System layout; fuel tanks; supply systems.
13.13	**13.13(b)**	**Systèmes carburant (ATA 28/47) — Gestion du carburant**	Fuel systems (b)	**2**	Cross-feed and transfer; refuelling and defuelling.
13.13	**13.13(c)**	**Systèmes carburant (ATA 28/47) — Indications et alarmes**	Fuel systems (c)	**3**	Indications and warnings.
13.13	**13.13(d)**	**Systèmes carburant (ATA 28/47) — Systèmes spéciaux**	Fuel systems (d)	**1**	Dumping, venting and draining; inert gas systems.
13.13	**13.13(e)**	**Systèmes carburant (ATA 28/47) — Équilibrage longitudinal**	Fuel systems (e)	**3**	Longitudinal balance fuel systems.
13.14	**13.14(a)**	**Système hydraulique (ATA 29) — Architecture**	Hydraulic power (a)	**1**	System layout; hydraulic fluids; hydraulic reservoirs and accumulators; filters; power distribution.

13.14	**13.14(b)**	**Système hydraulique (ATA 29) — Fonctionnement (1)**	Hydraulic power (b)	**3**	Pressure generation: electric and mechanical; pressure control; indication and warning systems; servicing.
13.14	**13.14(c)**	**Système hydraulique (ATA 29) — Fonctionnement (2)**	Hydraulic power (c)	**3**	Pressure generation: pneumatic; emergency pressure generation; interface with other systems.
13.15	**13.15(a)**	**Protection givrage et pluie (ATA 30) — Principes**	Ice and rain protection (a)	**2**	Ice formation, classification, and detection.
13.15	**13.15(b)**	**Protection givrage et pluie (ATA 30) — Dégivrage**	Ice and rain protection (b)	**3**	De-icing systems: electrical, hot-air, pneumatic, and chemical; probe and drain heating.
13.15	**13.15(c)**	**Protection givrage et pluie (ATA 30) — Antigivrage**	Ice and rain protection (c)	**2**	Anti-icing systems: electrical, hot-air, and chemical.
13.15	**13.15(d)**	**Protection givrage et pluie (ATA 30) — Essuie-glaces**	Ice and rain protection (d)	**1**	Wiper systems.
13.15	**13.15(e)**	**Protection givrage et pluie (ATA 30) — Répulsif de pluie**	Ice and rain protection (e)	**1**	Rain repellent.
13.16	**13.16(a)**	**Train d'atterrissage (ATA 32) — Description**	Landing gear (a)	**1**	Construction, shock absorbing; tyres.
13.16	**13.16(b)**	**Train d'atterrissage (ATA 32) — Fonctionnement du système**	Landing gear (b)	**3**	Extension and retraction systems: normal and emergency; indications and warnings; wheels, brakes, antiskid, and autobraking; steering.
13.16	**13.16(c)**	**Train d'atterrissage (ATA 32) — Détection sol/air**	Landing gear (c)	**3**	Air-ground sensing.
13.17	13.17	**Oxygène (ATA 35)**	Oxygen (ATA 35)	**3**	System layout: cockpit, cabin; sources, storage, charging, and distribution; supply regulation; indications and warnings.

13.18	13.18	**Pneumatique / dépression (ATA 36)**	Pneumatic/ vacuum (ATA 36)	**2**	System layout; sources: engine/APU, compressors, reservoirs, ground supply; pressure control; distribution; indications and warnings; interfaces with other systems.
13.19	13.19	**Eau et déchets (ATA 38)**	Water/waste (ATA 38)	**2**	Water system layout, supply, distribution, servicing, and draining; toilet system layout, flushing and servicing.
13.20	**13.20(a)**	**Avionique modulaire intégrée — AMI (ATA 42) — Description**	IMA (ATA 42) (a)	**3**	Overall system description and theory: core system; network components. Functions typically integrated: bleed management, air pressure control, air ventilation and control, avionics and cockpit ventilation control, temperature control, air traffic communication, avionics communication router, electrical load management, circuit breaker monitoring, electrical system BITE, fuel management, braking control, steering control, landing gear extension and retraction, tyre pressure indication, oleo pressure indication, brake temperature monitoring.
13.20	**13.20(b)**	**Avionique modulaire intégrée — AMI (ATA 42) — Architectures types**	IMA (ATA 42) (b)	**3**	Typical system layouts.
13.21	13.21	**Systèmes cabine (ATA 44)**	Cabin systems (ATA 44)	**3**	System architecture, operation and control of systems for: passenger in-flight entertainment; communication within the aircraft (CIDS); communication between the aircraft cabin and ground stations including voice, data, music and video transmission. CIDS interface; data exchange between LRUs; flight attendant panels (FAPs); CNS server and interfaces with data/radio communication, CCS, IFES, ECS, CMMS, CMS, MCSs.
13.22	13.22	**Systèmes d'information (ATA 46)**	Information systems (ATA 46)	**3**	The units and components which furnish a means of storing, updating, and retrieving digital information. Typical examples include: air traffic and information management systems; aircraft general information system; flight deck information system; maintenance information system; passenger cabin information system; miscellaneous information systems; other linked systems.

MODULE 14 — PROPULSION — LICENCE B2

Ref.	Sous -item	Intitulé (FR)	Intitulé (EN)	Niv.	Contenu détaillé (EN)
14.1	**14.1(a)**	**Moteurs — Turbines (turbojet, turbofan, turboshaft, turboprop)**	Engines (a) - Turbine engines	**1**	Constructional arrangement and operation of turbojet, turbofan, turboshaft, and turboprop engines.
14.1	**14.1(b)**	**Moteurs — Groupes auxiliaires de puissance (APU)**	Engines (b) - APUs	**1**	Constructional arrangement and operation of auxiliary power units (APUs).

14.1	**14.1(c)**	**Moteurs — Moteurs à pistons**	Engines (c) - Piston engines	**1**	Constructional arrangement and operation of piston engines.
14.1	**14.1(d)**	**Moteurs — Moteurs électriques et hybrides**	Engines (d) - Electric and hybrid engines	**2**	Constructional arrangement and operation of electric and hybrid engines, their electric energy storage and control systems.
14.1	**14.1(e)**	**Moteurs — Contrôle électronique moteur (FADEC)**	Engines (e) - FADEC	**2**	Electronic engine control and fuel-metering systems (full authority digital engine control (FADEC)).
14.2	14.2	**Systèmes d'indication moteur électriques/électroniques**	Electric/electronic engine indication systems	**2**	Exhaust gas temperature / interstage turbine temperature systems; cylinder head temperature, engine coolant temperature, engine speed; engine thrust indication: engine pressure ratio, engine turbine discharge pressure or jet pipe pressure systems; vibration measurement systems; oil pressure and temperature; fuel pressure, temperature, and flow; manifold pressure; engine torque.
14.3	14.3	**Systèmes hélice**	Propeller systems	**2**	Propeller speed indication; speed control and pitch change methods — electrical/electronic; synchronising and synchrophasing equipment; electrical anti-icing/de-icing equipment.
14.4	14.4	**Systèmes de démarrage et d'allumage**	Starting and ignition systems	**2**	Operation of engine start systems and components; ignition systems and components; maintenance safety requirements.