

Private Pilot Licence Examinations – 020 Aircraft General Knowledge Aeroplane and Helicopter

Syllabus Reference	Syllabus details & Associated Learning Objective	Aeroplane		Helicopter	
		PPL	Bridge Course	PPL	Bridge Course
020.00.00.00	AIRCRAFT GENERAL KNOWLEDGE				
021.00.00.00	AIRFRAME AND SYSTEMS, ELECTRICS, POWERPLANT AND EMERGENCY EQUIPMENT				
021.01.00.00	System design, loads, stresses, maintenance				
021.01.01.00	Loads and combination loadings applied to an aircraft's structure	x	x	x	x
021.02.00.00	Airframe				
021.02.01.00	Wings, tail surfaces and control surfaces				
021.02.01.01	Design and constructions	x	x		
021.02.01.02	Structural components and materials	x	x		
021.02.01.03	Stresses	x	x		
021.02.01.04	Structural limitations	x	x		
021.02.02.00	Fuselage, doors, floor, wind-screen and windows				
021.02.02.01	Design and constructions	x	x	x	x
021.02.02.02	Structural components and materials	x	x	x	x
021.02.02.03	Stresses	x	x	x	x
021.02.02.04	Structural limitations	x	x	x	x
021.02.03.00	Flight and control surfaces				
021.02.03.01	Design and constructions			x	x
021.02.03.02	Structural components and materials			x	x
021.02.03.03	Stresses and aero elastic vibrations			x	x
021.02.03.04	Structural limitations			x	x
	Hydraulics				
021.03.00.00	Hydromechanics: basic principles	x	x	x	x
021.03.01.00	Hydraulic systems	x	x	x	x
021.03.01.01	Hydraulic fluids: types and characteristics, limitations	x	x	x	x
021.03.01.02	System components: design, operation, degraded modes of operation, indications and warnings	x	x	x	x
021.04.00.00	Landing gear, wheels, tyres and brakes				
021.04.01.00	Landing gear				
021.04.01.01	Types and materials	x	x	x	x
021.04.02.00	Nose wheel steering: design and operation	x	x		
021.04.03.00	Brakes				
021.04.03.01	Types and materials	x	x	x	x
021.04.03.02	System components: design, operation, indications and warnings	x	x	x	x
021.04.04.00	Wheels and tyres				
021.04.04.01	Types and operational limitations	x	x	x	x
021.05.00.00	Helicopter equipment			x	x
021.06.00.00	Flight controls				
021.06.01.01	Mechanical or powered	x	x	x	x
021.06.01.02	Control systems and mechanical	x	x	x	x

021.06.01.03	System components: design, operation, indications and warnings, degraded modes of operation and jamming	x	x	x	x
021.06.02.00	Secondary flight controls				
021.06.02.01	System components: design, operation, degraded modes of operation, indications and warnings	x	x		
021.06.03.00	Anti-icing systems				
021.06.03.01	Types and operation (pitot and windshield)	x	x	x	x
021.07.00.00	Fuel system				
021.07.01.00	Piston engine				
021.07.01.01	System components: design, operation, degraded modes of operation, indications and warnings	x	x	x	x
021.07.02.00	Turbine engine				
021.07.02.01	System components: design, operation, degraded modes of operation, indications and warnings			x	x
021.08.00.00	Electrics				
021.08.01.00	Electrics: general and definitions				
021.08.01.01	Direct current: voltage, current, resistance, conductivity, Ohm's law, power and work	x	x	x	x
021.08.01.02	Alternating current: voltage, current, amplitude, phase, frequency and resistance	x	x	x	x
021.08.01.03	Circuits: series and parallel	x	x	x	x
021.08.01.04	Magnetic field: effects in an electrical circuit	x	x	x	x
021.08.02.00	Batteries				
021.08.02.01	Types, characteristics and limitations	x	x	x	x
021.08.02.02	Battery chargers, characteristics and limitations	x	x	x	x
021.08.03.00	Static electricity: general				
021.08.03.01	Basic principles	x	x	x	x
021.08.03.02	Static dischargers	x	x	x	x
021.08.03.03	Protection against interference	x	x	x	x
021.08.03.04	Lightning effects	x	x	x	x
021.08.04.00	Generation: production, distribution and use				
021.08.04.01	DC generation: types, design, operation, degraded modes of operation, indications and warnings	x	x	x	x
021.08.04.02	AC generation: types, design, operation, degraded modes of operation, indications and warnings	x	x	x	x
021.08.05.00	Electric components				
021.08.05.01	Basic elements: basic principles of switches, circuit-breakers and relays	x	x	x	x
021.08.06.00	Distribution				
021.08.06.01	General:	x	x	x	x
	(a) bus bar, common earth and priority;	x	x	x	x
	(b) AC and DC comparison.	x	x	x	x
021.09.00.00	Piston engines				
021.09.01.00	General				
021.09.01.01	Types of internal combustion engine: basic principles and definitions	x	x	x	x
021.09.01.02	Engine: design, operation, components and materials	x	x	x	x
021.09.02.00	Fuel				
021.09.02.01	Types, grades, characteristics and limitations	x	x	x	x
021.09.02.02	Alternate fuel: characteristics and limitations	x	x	x	x
021.09.03.00	Carburettor or injection system				
021.09.03.01	Carburettor: design, operation, degraded modes of operation, indications and warnings	x	x	x	x