Course Title	**Aircraft General Knowledge - Airframe and Systems**				
Course Code	AVM215				
Course Type	Compulsory for Air Operations Specialization				
Level	Bachelor (1st cycle)				
Year / Semester	2nd Year / 1st Semester				
Instructor's name	TBA				
ECTS	6	Lectures / week	3 Hours /14 Weeks	Laboratories / week	None
Course Purpose and Objectives	The purpose of the Aeroplane General Knowledge (Airframes and Systems) course is to provide the student with the knowledge required in order to be able to understand and efficiently use all the aeroplane control systems. The course aims to cover subjects like aeroplane systems design, airframes, hydraulics, landing gears, flight controls, engines, electrics, fuel systems, oxygen systems, protection and detection systems.				
Learning Outcomes	Upon successful completion of this course students should be able to: • Define the main principles and issues relating to aeroplane systems design and maintenance. • Describe the parts that constitute an aeroplane's airframe. • Explain how the aeroplane's hydraulic systems work. • Describe the parts that make up the landing gear and their operation. • Explain how the different flight controls are used in order to control the aeroplane on the ground and in the air. • Describe the pneumatics, pressurisation, air conditioning and oxygen systems and explain their proper usage. • Describe all the protection and detection systems of an aeroplane and explain their proper usage. • Describe the electrical systems of an aeroplane; • Describe the operation of the different types of aeroplane engine.				
Prerequisites	AVM111	Co-requisites	None		
Course Content	The material included in this course cover the following subjects: • **System Design, Loads, Stresses, Maintenance:** System design, Loads and stresses, Fatigue, Corrosion, Maintenance.				

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Airframe: Construction and attachment methods, Materials, Wings, Tail surfaces, Control surfaces, Fuselage, landing gear, doors, floor, wind-screen and windows, Structural limitations.
Hydraulics: Hydro-mechanics: basic principles, Hydraulic systems.
Landing Gear, Wheels, Tyres, Brakes: Landing gear, Nose wheel steering (design, operation), Brakes, Wheels, rims and tyres.
Flight Controls: Primary Flight Controls, Secondary Flight Controls, Fly-by-Wire (FBW) control systems.
Pneumatics – Pressurisation And Air Conditioning Systems: Pneumatic/Bleed air supply, Pressurisation and air conditioning system.
Anti-Icing and De-Icing systems: Types, design, operation, indications and warnings, operational limitations, Ice warning systems: types, operation, and indications.
Fuel system: Piston engine, Turbine engine.
Electrics: General, definitions, basic applications (circuit-breakers, logic circuits), Batteries, Generation, Distribution, Electrical motors.
Piston Engines: General, Fuel, Carburettor/Injection system, Cooling systems, Lubrication systems, Ignition circuits, Mixture, Propellers, Performance and engine handling.
Turbine engines: Basic principles, Main engine components, Additional components and systems, Engine Operation and Monitoring, Performance aspects, Auxiliary Power Unit (APU).
Protection and Detection Systems: Smoke detection, Fire protection systems, Rain protection system.
Oxygen Systems: Operating principles, modes of operation, portable oxygen systems, actuation methods.

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<tr><td>Teaching Methodology</td><td>Face-to-face</td></tr>
<tr><td>Bibliography</td><td>Bristol ATPL (A) Groundschool Manual & CBT Software</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><td>Examinations</td><td>90%</td></tr>
<tr><td>Participation</td><td>10%</td></tr>
<tr><td></td><td>100%</td></tr>
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<tr><td>Language</td><td>English</td></tr>
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