

1. Title	Basics Aerodynamics I
2. Code	EMAMAG342A
3. Range	The knowledge is needed for a wide range of aircraft repair and maintenance works, e.g. applicable to aircrafts, analysis, machineries, airworthiness, airframes, avionics, materials, tests, documentation, safety, health and tools etc.
4. Level	3
5. Credit	2
6. Competency	<p style="text-align: center;"><u>Performance Requirement</u></p> <p>6.1 Knowledge</p> <ul style="list-style-type: none"> ◆ Able to understand the physics of the Atmosphere ◆ Able to understand the aerodynamics <ul style="list-style-type: none"> • Airflow around a body. • Boundary layer, laminar and turbulent flow, free stream flow, relative airflow, upwash and downwash. vortices, stagnation. • Thrust, Weight, Aerodynamic Resultant. • Generation of Lift and Drag: Angle of Attack, Lift coefficient, Drag coefficient, polar curve, stall. • Aerofoil contamination including ice, snow, frost. ◆ Able to understand the theory of flight <ul style="list-style-type: none"> • 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.

	<ul style="list-style-type: none"> ◆ Able to understand the flight stability and dynamics <ul style="list-style-type: none"> • Longitudinal, lateral and directional stability (active and passive).
	<p>6.2 Professional approach</p> <ul style="list-style-type: none"> ◆ Able to understand the principal elements of the subjects.
7. Assessment Criteria	<p>The integral outcomes requirement of this UoC are:</p> <ul style="list-style-type: none"> (i) Able to understand the basic elements of the subjects. (ii) Able to give a simple description of the whole subject, using common words and examples. (iii) Able to use the typical terms.
8. Remarks	Ref: HKAR-66 Module 8: Basic Aerodynamics.