EAS111 Flight Discovery

Level: 1
Credit Units: 5 Credit Units
Presentation Pattern: EVERY SEMESTER

Synopsis:
This course aims to reinforce understanding of key aspects of aerospace engineering fundamentals, such as aerodynamics, flight mechanics, aircraft structures and design, with students’ exposure to actual flight experience and aircraft operations.

Topics:
- Familiarization Flight (Back Seat observer) - student would get used to the airborne environment, and use that occasion to understand the radio communications, and familiarise on the instrument displays.
- Familiarization Flight (Back seat observer) with monitoring tasks on aircraft and engine performance.
- Front (right) Seat Flight - Aircraft cockpit instrumentation and MMI; Effects of flight controls on aircraft performance.
- Front (right) Seat Flight - Balances of forces in level flight; stalling.

Learning Outcome:
- Explain general aircraft design features such as wing platform, aircraft structure and flight instrumentation in relation to aircraft roles and functions.
- Identify the functions of control surfaces and lift augmentation devices.
- Describe the primary and secondary flight controls in an aircraft and explain the relationship between lift, speed of airflow over aerofoil and control forces.
- Demonstrate flight mechanics and aircraft response to flight control inputs.
- Relate the effects of effects of primary and secondary controls on aircraft flight and the effects of power and airspeed changes on flight controls.
- Demonstrate the relationship between lift-weight and thrust-drag coupling on aircraft behavior.
- Determine the relationship between powerplant and aircraft climb performance and illustrate the symptoms of aircraft stall.
- State the balance of forces required for level flight.
- Explain the relationship between aerodynamic principles of lift, drag, thrust, angle of attack and camber in level flight.

Assessment Strategies:

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