

Flight Mechanics

Course Code:

ME 483

Course Type:

Area Elective

Credits:

3

Theoric:

3

Practice:

0

Laboratory Hour:

0

ECTS:

5

Prerequisite Courses:

Dynamics [1]

Course Language:

English

Course Content:

Aircraft forces and subsystems: The atmosphere, aerodynamics forces, propulsion subsystem. Turbojets-Level flight in the vertical plane: Governing equations, level flight, ceiling, cruise flight and range, maximum endurance. Other flight regimes in the vertical plane: Take-off and landing, climbing flight, unpowered flight. Turning flight in the horizontal plane: Governing equations, maximum load factor, bank angle, turning rate and turning radius. Piston-Props – Level Flight in the vertical plane: Governing equations, level flight and ceiling conditions, best range, maximum endurance. Other flight regimes:

Take-off and landing, climbing flight, turning flight. Turboprops, turbofans and others. Mach number representation, flight and maneuvering envelopes, effect of wind on performance.