ME 677 Introduction to Aerospace Engineering (3-0-0-6)

History of flights; Anatomy of flight vehicles; Classification of aircraft and spacecraft; Atmosphere and flying weather; Basic aerodynamics, airfoils and wings; Aerodynamic forces, lift and drag, high lift devices, Aircraft performance–takeoff and landing, cruising, climbing, gliding and turning flights, range and endurance, ceiling, flight envelope; Uninhabited aerial vehicles; Principles of stability and control; Propulsion system and airframe integration; Various propulsive devices; Elements of structures and materials; Instruments and navigation systems; Hypersonic vehicles; Basics of space flight; Indian aerospace scenario.

References:

[1] Anderson, J. D. Jr., Introduction to Flight, McGraw Hill, 2000..

[2] Anderson, J.D. Jr., Aircraft Performance and Design, McGraw Hill, 1999.

[3] Clancy, L. J., Aerodynamics, Himalayan Books, 1996.

[4] Eshelby, M.E., Aircraft Performance: Theory & Practice, AIAA Series, 2000.

[5] Houghton, E.L., and Carpenter, P. W., Aerodynamics for Engineering Students, BH, 2001.

[6] Ojha, S.K., Flight Performance of Aircraft, AIAA Series, 1997.

[7] Shevell, R. A., Fundamentals of Flight, Pearson Education, 1989.