

### **ME 550 Introduction to Aerospace Engineering (3-0-0-6)**

History of flights; Anatomy of flight vehicles; Classification of aircraft and spacecraft; Atmosphere and flying weather; Airfoil and wing aerodynamics; 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; Principles of stability and control; Aerospace propulsion systems; Elements of structures and materials; Airplanes of the future; Hypersonic vehicles; Basics of space flight; Indian aerospace scenario.

#### **References**

1. J. D. Anderson, Jr., Introduction to Flight, McGraw Hill, 2000.
2. R. A. Shevell, Fundamentals of Flight, Pearson Education, 1989.
3. C. Kermode, Mechanics of Flight, Longman, 1996.
4. L. J. Clancy, Aerodynamics, Himalayan Books, 1996.
5. S. K. Ojha, Flight Performance of Aircraft, AIAA Series, 1997.
6. J. J. Sellers, Understanding Space: An Introduction to Astronautics, McGraw Hill, 2005.