

SYLLABUS :-

Prerequisites: AE21003

3 - 0 - 0: 3 Credits N-body problem, ideal two-body equation of motion, Orbit established from initial conditions, Orbital elements, determination of orbits from position and velocity vectors, and from two and three-position vectors, effect of small impulses on orbital elements, Ballistic missile trajectories and performance low acceleration orbit transfers; Equations of motion of a rigid rocket, powered flight trajectory, trajectory optimization, multi-staging and optimization of number of stages. Disturbing forces and control forces, motion of spinning and fin-stabilized rockets, general theory of orbital perturbation and orbit decay, error analysis, Altitude dynamics, Restricted 3-body problem, stability of liberation points, Lunar transfer of orbits, Interplanetary flight.