AE807 AIRCRAFT PROPULSION 2-1-0-3

Cycle Analysis of Air Breathing Engines – Application of Euler's Turbo Machinery Equation to Axial and Centrifugal Machines: Velocity Diagrams, Stage Parameters, Three Dimensional Flows In Turbo-Machinery –Components of Axial and Centrifugal Turbines–Performance Maps–Compressor Turbine Matching–Surge Control.

Thermal Limits of Blades and Vanes –Blade Cooling, Film Cooling and Regenerative Cooling; Subsonic, Supersonic and Hypersonic Inlets: Inlet Sizing, Inlet Performance; Aircraft Combustors: Types of Combustors, Combustor Performance, Flame stabilization and Combustor sizing

Afterburners: Flame Stabilization in afterburners, Flow through nozzles: Nozzle Performance.

TEXT BOOKS/ REFERENCES:

1. Mattingly. Jack.D, "Elements of Propulsion: Gas Turbines and Rockets," AIAA Education Series, 2006.
2. R.L, "Fundamentals of Jet Propulsion with Applications," Cambridge University Press, 2005.
3. Hill and Peterson, "Mechanics and Thermodynamics of Propulsion," Dorling Kindersely (India), 2010.