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## ME 285(AUG) 3:0

### Turbomachine Theory

**Instructor(s):** Raghuraman N Govardhan

**Course description:**

Introduction to turbo-machines, mixing losses, review of vorticity, profile changes in contracting and expanding ducts. Brief review of diffusers, rotating co-ordinate system, total enthalpy, rothalpy, Euler turbine equation, velocity triangles. Specific speed and Cordier diagram, cascade aerodynamics. Elemental compressor stage, reaction work and flow coefficients. Equations of motion in axisymmetric flow, simple and extended radial equilibrium. Elemental axial turbine stage, radial and mixed flow machines, work done by Coriolis forces and by aerofoil action, the centrifugal compressor, vaned and vaneless diffusers

**Prerequisites:**

Sabersky, R.H., and Acosta, A., Fluid Flow: A First Course in Fluid Mechanics

**Resources:**

**Outcomes:**

**Additional information:**

**Course website:**