

ME 615 Rotor Dynamics(3-0-0-6)

Rotor-bearing interaction. Flexural vibration, critical speeds of shafts, Effects of anisotropic bearings, unbalanced response of an asymmetric shaft. Gyroscopic effects. Aerodynamic effects. Equivalent discrete system. Geared and branched systems. Fluid film bearings: Steady state characteristics of bearings. Rigid and flexible rotor balancing. Condition monitoring of rotating machinery. Measurement techniques.

Textbooks:

- [1] J. S. Rao, *Rotor Dynamics*, Third ed., New Age, New Delhi, 1996
- [2] M. J. Goodwin, *Dynamics of Rotor-Bearing Systems*, Unwin Hyman, Sydney, 1989.