

PCI6J004 STRUCTURAL DYNAMICS (3-1-0)

Module I:

Single degree of freedom system: Equation of motion, Damped and undamped free vibration, Response to harmonic, periodic, impulse load and general dynamic load, Duhamel's integral;

Module II:

Multi-degrees of freedom system: Equation of motion, Free vibration analysis, Dynamic response and modal analysis.

Module III:

Free and Forced vibration of distributed mass system: Longitudinal, flexural and torsional vibration of rods, transverse vibration of beams. Raleigh's principle.

Module IV:

Analysis of structural response to Earthquakes: Seismological background, Deterministic analysis of Earthquake.

Reference Books:

1. Dynamics of Structures: Theory and Applications to Earthquake Engineering, A K Chropra , Prentice Hall of India
2. Theory of Vibration with application, W. T. Thomson.
3. Structural Dynamics, M Mukhopadhyay: Ane Books Pvt Ltd, New Delhi
4. Structural Dynamics - Theory and Computation, M. Paz, Van Nostrand, 1985.
5. Dynamics of structures, W. Clough and J Penzien, McGraw-Hill, Inc,