Topic: Vibration

Relevant Course: Theory of Vibration/ Dynamics of Machines/ Theory of Machines / Structural Dynamics

Department: Mechanical Engg., Civil Engineering, Aerospace Engineering, Automobile Engineering

Relevant Semester: 5th / 6th/ 7th / 8th semester

Pre-requisite: Engineering Mechanics, Engineering Mathematics

Topic Description:

Nature of Vibration – Harmonic and Transient Vibration, Lumped Parameter modeling for vibratory system, Phasor / complex exponential representation of harmonic quantities.

Single degree of freedom vibration analysis, Free vibration, Damped and Undamped vibration, Natural Frequency, Logarithmic decrement.

Forced harmonic vibration, Resonance, Support motion, Transmissibility

Reference: Theory of Vibration by Thomson, Dahleh&Padmanabhan.