

0905361 Mechanical Vibrations (3-0-3)

Prerequisite: Dynamics + Advanced Engineering Mathematics

Fundamentals of vibration (definitions, elements of vibrating systems, classification and description of vibration). Derivation of governing differential equations using Newton's second law of motion, Principle of virtual work and Lagrange's equations. Free undamped and damped vibrations of simple oscillators. Harmonically excited vibrations. Transient vibrations. Two and multidegree of freedom systems: free and forced vibrations, eigenvalues and eigenvectors, orthogonality relationships. Control of vibrations.