



PRINCIPLES OF VIBRATION CONTROL

PROF. BISHAKH BHATTACHARYA

Department of Mechanical Engineering
IIT Kanpur

PRE-REQUISITES : Basics of Mechanical Vibrations

INTENDED AUDIENCE : B.Tech/M.Tech/PhD

INDUSTRIES APPLICABLE TO : Oil, Space, Manufacturing industries

COURSE OUTLINE :

Vibration is undesirable in most engineering systems. The adverse effects of vibration include fatigue failure, severe damages due to resonance, malfunctioning of sensitive instruments/systems, loss of accuracy of work-piece due to vibration of machine tools, etc. This course will give a brief overview about the various strategies to control such vibrations in systems and principle behind them.

ABOUT INSTRUCTOR :

Prof. Bishakh Bhattacharya is Professor at the Department of Mechanical Engineering and currently heading the Cognitive Science programme, IIT Kanpur. His research interest primarily lies in vibration control, structural health monitoring, energy harvesting system, intelligent system design and Child-Reconfigurable Robot Interaction. He is the coordinator of Space Technology Cell, IIT Kanpur and head of the SMSS (Smart Materials, Structures and Systems) Laboratory.

COURSE PLAN :

Week 1: Introduction to Vibration control

Week 2: Dynamic Properties and Selection of Materials

Week 3: Dynamic Vibration Absorbers

Week 4: Principles of Active Vibration Control