

# Seismic Analysis of Structures - Video course

## COURSE OUTLINE

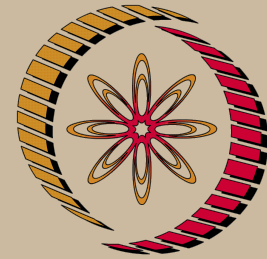
Seismology- tectonic plates, causes of earthquake, soil effects, seismic hazard analysis; Earthquake inputs - spectrums, PSDFs, design spectrum, predictive relationship; Response analysis for specified ground motion - time and frequency domain analyses of structures for single and multi point excitations; Response spectrum method of analysis - equivalent lateral load, response spectrum method for classically and non classically damped systems, response spectrums given in different codes:

Spectral analysis for random excitations- fundamentals of random vibration for spectral analysis, spectral analysis of structures for single and multipoint excitations;

Inelastic analysis of structures - incremental analysis for SDOF and MDOF systems, push over analysis, ductility, inelastic spectrum

## COURSE DETAIL

Sl.No.	Topic	No. of hours
1.	Seismology	4
2.	Seismic Inputs	4
3.	Response Analysis for Specified Ground Motion	6
4.	Frequency Domain Spectral Analysis	5
5.	Response Spectrum Method of Analysis	5



NP-TEL

# NPTEL

<http://nptel.ac.in>

## Civil Engineering

### Pre-requisites:

1. Structural Analysis (desirable - Structural Dynamics)

### Additional Reading:

1. Geotechnical Earthquake Engineering by C.L. Kramer.
2. Earthquake Engineering by Bruce A. Bolt.

### Coordinators:

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**References:**

1. Seismic Analysis of Structures by T.K.Datta (John Wiley)
2. Dynamics of Structures– Application to Earthquake Eng. by A.K.Chopra (Prentice Hall).
3. Dynamics of Structures by R.W.Clough and J.Penzien ( Mc Graw Hill)