CIVE 998: Seismic Design of Reinforced Concrete Buildings (Spring 2019)

Instructor:

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Lecture:

MW: 10:30–11:45 AM
STC 102AB (Omaha) and NH-W213 (Lincoln)

Prerequisites:

Reinforced Concrete Design, Structural Dynamics or equivalent

Objective:

To use theory and experience to proportion and detail reinforced concrete members under seismic load events.

Topics Covered:

Response Spectra
Strong ground motion
Linear Response of Multi-Degree-of-Freedom Systems
Vibration Periods for building Structures
Newmark's Simplified Method for Natural Periods
Nonlinear Response
Concepts of Limit Analysis for Lateral Loads
Base Shear Strength of Building Structures
Equivalent Static Lateral Forces for Proportioning Structural Systems
Lateral Response Displacement
Design Examples using Equivalent Static Lateral Forces
Behavior of Reinforced Concrete Structures in Earthquakes
US building codes for new construction
Determination of earthquake-induced forces
Detailing provisions for reinforced concrete structures