



Course Name:

Geotechnical Earthquake Engineering

Course Number: 20-440	Credit: 3
Program: Graduate	Course Type: General Selective
Prerequisite: Soil Dynamics	Corequisite: -

Course Description (Objectives):

The course focuses on understanding seismic hazards and their impact on soil and structures, emphasizing analysis, mitigation, and design strategies for earthquake resilience.

Course Content (outline):

- Chapter 1: Seismology and Earthquakes
- Chapter 2: Strong Ground Motion
- Chapter 3: Seismic Hazard Analysis
- Chapter 4: Wave Propagation
- Chapter 5: Dynamic Soil Properties
- Chapter 6: Ground Response Analysis
- Chapter 7: Local Site Effects and Design Ground Motions
- Chapter 8: Liquefaction
- Chapter 9: Seismic Slope Stability

References:

- Kramer, S. L. (1996) "Geotechnical Earthquake Engineering," Prentice Hall, New Jersey, USA
- Ishihara, K. (1985) "Stability of Natural Deposits during Earthquakes," Theme Lecture, Proc. 11th ICSMFE, San Francisco, Vol. 2, pp. 321-376
- Ishihara, K. (1993) "Liquefaction and Flow Failure during Earthquakes," The 33rd Rankin Lecture, Geotechnique, Vol. 43, No. 3, 351-415
- Many other papers are assigned for further readings