



Course

Earthquake Engineering and Foundation Dynamics

CVEN9526 | 6 Units of Credit

Overview

The course is an advanced course in earthquake analysis and design with particular emphasis on foundation dynamics. The course covers the: Principles of engineering seismology, geotechnical earthquake engineering, earthquake engineering, case studies, pathology of geo-structures and concrete structures, strong ground motion and seismic hazard analysis. Wave Propagation - Elastodynamics. Principles of earthquake engineering & structural dynamics: Single-degree of freedom system, harmonic excitation, linear systems, morphology of structures against seismic loads, advanced topics. Soil dynamics: Laboratory and in-situ investigation of dynamic properties, modulus and damping, stress-strain response, advanced modelling of soils against dynamic and cyclic loading, liquefaction of soils, seismic codes, make decision in soil properties used in engineering design, lab visit and demonstration. Ground response analysis, local site effects, seismic codes and design spectra, demonstration of computer software, geotechnical and structural applications. Seismic design of foundations and retaining walls: geotechnical and structural design. Seismic slope stability and seismic design of underground structures. Mitigation to seismic hazards, improvement of ground and geo-structures response against earthquakes, isolation systems, new technologies. Advanced topics: Soil-foundation-structure interaction, machine foundations vibrations. Advanced topics on foundations and structural members seismic design. This course is suitable for those in the Geotechnical Engineering and/or Structural Engineering specialisation within the Masters of Engineering Science degree.

Faculty

Faculty of Engineering

School

School of Civil and Environmental Engineering

Study Level

Postgraduate

Indicative contact hours

0

Timetable

[Visit timetable website for details](#)

Course Outline

To access course outline, please visit:

[CVEN9526 Course Outline](#)

Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

[Pre-2019 Handbook Editions](#)

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Authorised by Deputy Vice-Chancellor (Academic)

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