Geotechnical Earthquake Engineering (CEGE0035)

**Description**

This module provides students with an understanding of seismicity and earthquake-induced ground motions, and engineering approaches for modelling them for the purpose of geotechnical and structural seismic design. An overview of the behaviour of geotechnical structures under dynamic loading and their interaction with seismic structure design is provided. The module also introduces nonlinear phenomena in soils due to dynamic loadings, as well as the analysis methodologies for the evaluation of site response and liquefaction potential. This course is intended to cover the following topics: - Introduction: theory of vibrations. - Engineering Characterization of ground motions. - Review of Soil Dynamics and Fundamental of Dynamic Soil Properties. - Ground Response Analysis and Software Applications. - Seismic Design of Shallow and Deep Foundations. - Seismic Slope Stability. - Seismic Design of Retaining Walls. - Nonlinear phenomena in soils under dynamic loadings. Densification, liquefaction and cyclic mobility.

**Key information**

- **Year**: 2019/20
- **Credit value**: 15 (150 study hours)
- **Delivery**: PGT L7, Campus-based
- **Reading List**: [View on UCL website](#)
- **Tutor**: Dr Susana Lopez-Querol
- **Term**: Term 2
- **Timetable**: [View on UCL website](#)

**Assessment**

- Written examination (main exam period): 50%
- Coursework: 50%

**Find out more**

For more information about the department, programmes, relevant open days and to browse other modules, visit [ucl.ac.uk](http://ucl.ac.uk)

**Disclaimer:** All information correct as of June 2019. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
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