Advanced Seismic Design of Structures (CEGE0061)

**Description**

The course provides an insight to the latest methods, technologies and practical approaches implemented in Earthquake Engineering for designing and assessing the built environment. The course covers state-of-the-art design and assessment approaches recommended in codes and guidelines such as FEMA P-58, FEMA 445, FEMA 273, NEHRP, PEER, Global Earthquake Model (GEM).

**Learning Outcomes**

- Overview of Seismic Design of Structures to EuroCode 8
- Seismic Design of Steel Structures (e.g. Moment Resisting & Braced Frames)
- Elastic and Inelastic Response Spectra
- Modal and Response Spectrum Analysis
- Performance Based Earthquake Engineering (PBEE)
- Performance Based Seismic Design (PBSD) & Assessment (PBSA) of Structures:
  - Probabilistic Seismic Hazard Assessment (PSHA)
  - Nonlinear Structural Analysis Modelling
  - Seismic Fragility & Vulnerability Function Derivation
- Seismic Damage Assessment
- Seismic Loss Assessment

**Key information**

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

**Assessment**

- Coursework: 30%
- Coursework: 30%
- Coursework: 40%

**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 August 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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