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: 2020/21
- 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: 30.0%
- Coursework: 30.0%
- Coursework: 40.0%

Find out more
For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk
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

<table>
<thead>
<tr>
<th>Year</th>
<th>2020/21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit value</td>
<td>15 (150 study hours)</td>
</tr>
<tr>
<td>Delivery</td>
<td>UGM L7, Campus-based</td>
</tr>
<tr>
<td>Reading List</td>
<td><a href="#">View on UCL website</a></td>
</tr>
<tr>
<td>Tutor</td>
<td>Dr Arash Nassirpour Oskouei</td>
</tr>
<tr>
<td>Term</td>
<td>Term 2</td>
</tr>
<tr>
<td>Timetable</td>
<td><a href="#">View on UCL website</a></td>
</tr>
</tbody>
</table>

Assessment

![Assessment Graph]

- Coursework: 30.0%
- Coursework: 30.0%
- Coursework: 40.0%

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)