GRADUATE CERTIFICATE IN STRUCTURAL ENGINEERING

The graduate certificate in structural engineering program is appropriate for those who wish to gain specialized knowledge in one of the following tracks: earthquake engineering design of bridges and buildings, extreme event design of structures to resist the effects of accidental explosions and vehicular collision, concrete bridge design using the LRFD approach, or building design using the LRFD approach.

Students who successfully complete the certificate program may opt to continue towards a master’s degree in civil and environmental engineering department. All courses completed by the student in the graduate certificate program with a grade of B or better can be transferred to the master’s degree program.

Specific admission requirements are shown on the Graduate Program Finder. (http://www.gwu.edu/all-graduate-programs)

Visit the program website (https://www.cee.seas.gwu.edu/structural-engineering-graduate-certificate-program) for additional information.

REQUIREMENTS

The following requirements must be fulfilled: 12 credits in required courses in one selected track.

### Earthquake Engineering Design

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CE 6202</td>
<td>Methods of Structural Analysis</td>
<td></td>
</tr>
<tr>
<td>CE 6342</td>
<td>Structural Design to Resist Natural Hazards</td>
<td></td>
</tr>
<tr>
<td>CE 6404</td>
<td>Geotechnical Earthquake Engineering</td>
<td></td>
</tr>
<tr>
<td>CE 6800</td>
<td>Special Topics (Advanced Earthquake Engineering Topics)</td>
<td></td>
</tr>
</tbody>
</table>

### Concrete Bridge Design

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CE 6301</td>
<td>Design of Reinforced Concrete Structures</td>
<td></td>
</tr>
<tr>
<td>CE 6302</td>
<td>Prestressed Concrete Structures</td>
<td></td>
</tr>
<tr>
<td>CE 6310</td>
<td>Advanced Reinforced Concrete Structures</td>
<td></td>
</tr>
</tbody>
</table>

### Extreme Event Design of Structures

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CE 6202</td>
<td>Methods of Structural Analysis</td>
<td></td>
</tr>
<tr>
<td>CE 6342</td>
<td>Structural Design to Resist Natural Hazards</td>
<td></td>
</tr>
<tr>
<td>CE 8330</td>
<td>Advanced Finite Element Analysis</td>
<td></td>
</tr>
<tr>
<td>CE 6800</td>
<td>Special Topics ((Advanced Blast Resistant Topics)</td>
<td></td>
</tr>
</tbody>
</table>

### Building Design

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CE 6310</td>
<td>Advanced Reinforced Concrete Structures</td>
<td></td>
</tr>
<tr>
<td>CE 6342</td>
<td>Structural Design to Resist Natural Hazards</td>
<td></td>
</tr>
<tr>
<td>CE 6320</td>
<td>Design of Metal Structures</td>
<td></td>
</tr>
<tr>
<td>CE 6800</td>
<td>Special Topics (Advanced Building Design Topics)</td>
<td></td>
</tr>
</tbody>
</table>