PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE

USC SCHOOL
Viterbi School of Engineering

ACADEMIC DEPARTMENT
Sony Astani Civil and Environmental Engineering

GRADUATE PROGRAM
Civil Engineering

POST CODE
601

TERM EFFECTIVE DATE
Spring 2021

PROGRAM DESCRIPTION
A brief description of the graduate program.

The Master of Science in Civil Engineering is awarded in strict conformity with the general requirements of the USC Viterbi School of Engineering. A student may receive the Master of Science in Civil Engineering with a special option by specializing in one of the following courses of study: construction engineering; structural engineering; and transportation engineering. Students can choose the option of completing a thesis must include in their program 4 units of CE 594a and CE 594b. Total units for the degree is 28.

A general Master of Science in Civil Engineering without special designation is also given. The Master of Science in Civil Engineering (MSCE) with a General Option offers a broad education covering several specialty areas of Civil Engineering, including: general, earthquake engineering, structural mechanics, water resources or ocean and coastal engineering.

COMMON BACHELOR DEGREE PROGRAM PATHWAYS
A list of common bachelor’s degrees that undergraduate students pursue in advance of pursuing a progressive degree option with this graduate program. Some programs are restricted to certain majors while others are open to all students.

| BS Civil Engineering |

PREPARATORY UNDERGRADUATE COURSES
A list of courses at the undergraduate level that prepare students for the graduate program. Required coursework is listed first, followed by recommended courses. If not applicable, this section will be blank.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Required or Recommended</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 215</td>
<td>Statics and Dynamics</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CE 309</td>
<td>Fluid Mechanics</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CE 358</td>
<td>Elementary Theory of Structures</td>
<td>Required</td>
<td>4</td>
</tr>
</tbody>
</table>

UNDERGRADUATE COURSES USED TO REDUCE GRADUATE LEVEL UNITS
PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE

A list of undergraduate level courses that may be used to reduce the number of graduate level units required for the graduate program. If there are none, that is specified instead.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CORE GRADUATE PROGRAM REQUIREMENTS (# units required)
A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.
If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk (*) and the exception is explained in the “Department Notes” section at the end of this course plan template.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td></td>
<td></td>
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</tbody>
</table>

PRE-APPROVED ELECTIVE COURSEWORK
Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required of elective coursework.

<table>
<thead>
<tr>
<th></th>
<th>TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE</td>
</tr>
</tbody>
</table>

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

<table>
<thead>
<tr>
<th></th>
<th>TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)</td>
</tr>
<tr>
<td>19</td>
<td>MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE</td>
</tr>
</tbody>
</table>
NOTES FROM THE DEPARTMENT
This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

PDP students will take a minimum of 3 units from each specialty area. Students may not exceed 8 units in any specialty area.

Approved Specialty Area Courses

**Environmental Engineering & Water Resources**
- CE 451: Water Resources & Coastal Engineering
- CE 465: Water Supply & Sewage System Design
- CE 476: Design of Hydraulic Systems
- CE 510: Groundwater Management
- CE 516: Geohydrology
- CE 520a: Ocean and Coastal Engineering
- ENE 505: Energy and the Environment
- ENE 535: Applied Air Quality Management

**Construction and Transportation**
- CE 462: Construction Methods and Equipment
- CE 471: Principles of Transportation Engineering
- CE 501: Construction Practices
- CE 569: Project Controls
- CE 573: Advanced Technologies in AEC Practices
- CE 579: Introduction to Transportation Planning Law
- CE 583: Design of Transportation Facilities
- CE 585: Traffic Engineering and Control

**Geotechnical Engineering**
- CE 482: Subsurface Foundation Design
- CE 534: Design of Earth Structures

**Structural Engineering**
- CE 537: Advanced Reinforced Concrete
- CE 539: Advanced Steel Structures

ELECTIVES: Additional courses (up to 8 units be selected from Civil Engineering courses or disciplines related to Civil Engineering with the consent of an adviser.

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Kelly Goulis

Authorizing Dean’s Name

5/14/2021

Date Approved

Senior Associate Dean, Viterbi School of Engineering

Authorizing Dean’s Title

Last Revised 3/2/2021