<table>
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<tr>
<th>SEM</th>
<th>CR</th>
<th>CVEN XXXX-3</th>
<th>CVEN XXXX-3</th>
<th>Technical Elective-2</th>
<th>Technical Elective-3</th>
<th>S-H Elective-3 (upper-level)</th>
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<tr>
<td>8TH SEM (SPR)</td>
<td>14</td>
<td>Proficiency IV</td>
<td>Concentration II</td>
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<td>7TH SEM (FALL)</td>
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<td>CVEN XXXX-3</td>
<td>CVEN 3602-3 Transportation Systems</td>
<td>CVEN XXXX-3</td>
<td>CVEN 4899-4 Senior Design Project</td>
<td>S-H Elective-3 (upper-level)</td>
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<td>6TH SEM (SPR)</td>
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<td>CVEN 3227-3 Probability Statistics &amp; Decision for Civil Engrs. (Restricted to JRs/SRs)</td>
<td>CVEN XXXX-3</td>
<td>CVEN 3111-3 Analytical Mechanics II (CVEN 2121, co-req APPM 2360)</td>
<td>CVEN 3414-3 Fund. of Env. Engr. (CHEN 1211, APPM 1360)</td>
<td>WRTG 3030-3 Writing on Science &amp; Society (JR standing)</td>
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<td>5TH SEM (FALL)</td>
<td>15</td>
<td>CVEN 3246-3 Intro. To Construction (JR standing or instructor consent)</td>
<td>CVEN 3323-3 Hydraulic Engineering (CVEN 3313)</td>
<td>CVEN 3525-3 Structural Analysis (CVEN 3161)</td>
<td>CVEN 3698-3 Engineering Geology</td>
<td>CVEN 3708-3 Geotechnical Engineering I (CVEN 3161)</td>
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<td>4TH SEM (SPR)</td>
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<td>APPM 2360-4 Introduction to Linear Algebra &amp; Differential Equations (APPM 1360)</td>
<td>CVEN 3313-3 Theoretical Fluid Mechanics (CVEN 2121)</td>
<td>CVEN 3616-3 Mechanics of Materials I (CVEN 2121, co-req APPM 2360)</td>
<td>CVEN 3020-3* Introduction to Geomatics (APPM 1350)</td>
<td>AREN 1027-3* Engineering Drawing</td>
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<td>3RD SEM (FALL)</td>
<td>18</td>
<td>APPM 2350-4 Calculus III for Engineers (APPM 1360)</td>
<td>PHYS 1120-4 PHYS 1140-1 Gen.Phys II/Lab (PHYS 1110, co-req APPM 1360)</td>
<td>CVEN 2121-3 Analytical Mechanics I (PHYS 1110, co-req. APPM 2350)</td>
<td>AREN 2110-3 Thermodynamics (PHYS 1110, co-req. APPM 1360)</td>
<td>S-H Elective-3</td>
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<td>2ND SEM (SPR)</td>
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<td>APPM 1360-4 Calculus II for Engineers (APPM 1350)</td>
<td>PHYS 1110-4 Gen. Physics I (co-req. APPM 1350)</td>
<td>CVEN 2121-3 Analytical Mechanics I (PHYS 1110, co-req. APPM 2350)</td>
<td>AREN 1027-3* Engineering Drawing</td>
<td>S-H Elective-3</td>
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<td>1ST SEM (FALL)</td>
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<td>APPM 1350-4 Calculus I for Engineers (2 yr. HS alg., 1yr geom., ½ yr. trig.; or approval by faculty advisor)</td>
<td>CHEN 1211-3 Gen Chem for Engineers S (1 yr. HS chem. or CHEM 1021, HS Alg, co-req. CHEM 1221)</td>
<td>CHEN 1221-2 General Chemistry Lab for Engineers</td>
<td>CVEN 1317-2 Introduction to Civil &amp; Environmental Engineering</td>
<td>S-H Elective-3</td>
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</tbody>
</table>

Courses marked thus are offered only in SEMESTER shown (fall or spring).
S CHEN 1211 & CHEM 1221 must be taken concurrently.
* Both CVEN 2012 and AREN 1027 may be taken earlier or later in the program
** See curriculum description for acceptable courses
Civil Engineering Concentrations

GEOTECHNICAL ENGINEERING

Fundamental - CVEN 3708 Geotech Engr 1 (Spring or Fall), prereq CVEN 3161
Proficiency - CVEN 3718 Geotech Engr 2 (Spring or Fall), prereq CVEN 3708
Concentration - CVEN 4728 Foundation Engineering (Fall), prereq CVEN 3718 or consent
CVEN 5748 Design of Earth Structures (Spring), prereq CVEN 5708 or consent
OR any 4XXX level or above Geotech Engr. course

WATER RESOURCES ENGINEERING

Fundamentals - CVEN 3323 Hydraulic Engineering (Fall), prereq CVEN 3313
Proficiency - CVEN 4333 Engineering Hydrology (Spring), prereq CVEN 3313, coreq CVEN 3227
Concentration - CVEN 4353 Ground Water Engineering (Fall), prereq CVEN 3313
CVEN 5363 Modeling of Hydrologic Systems (Summer), prereq CVEN 3323 or coreq CVEN 4333
CVEN 4383 Groundwater Modeling (Spring), rec. prereq CVEN 4333

CONSTRUCTION ENGINEERING AND MANAGEMENT

Fundamentals - CVEN 3246 Introduction to Const (Spring or Fall), prereq JR or instructor consent
Proficiency - CVEN 3256 Const Equipment and Methods (Fall), rec. prereq CVEN 3246
Concentration - AREN 4506 Project Management I, prereq CVEN 3246
AREN 4606 Project Management II (Spring), prereqs CVEN 3246 and 4506

STRUCTURAL ENGINEERING/ STRUCTURAL MECHANICS

Fundamentals - CVEN 3525 Structural Analysis (Spring or Fall), prereq CVEN 3161
Proficiency - CVEN 4545 Steel Design (Spring) or CVEN 4555 Reinforced Concrete (Fall), prereq CVEN 3525 for both
Concentration - CVEN 4161 Mechanics of Materials II (Spring), prereq CVEN 3161
AND one of the following:
CVEN 4545 or 4555 (whichever not selected as proficiency)

ENVIRONMENTAL ENGINEERING

Fundamentals - CVEN 3414 Fundamentals of Environmental Engineering (Spring or Fall), prereqs CHEN 1211 & APPM 1360
Proficiency - CVEN 3424 Water and Wastewater (Spring), prereq CVEN 3414
Concentration - Any two of the following:
CVEN 4404 Water Chemistry (Lab CVEN 4414) (Fall), prereqs CHEN 1211 & CVEN 3414
CVEN 3434 Introduction to Applied Ecology (Spring), prereqs CHEN 1211 & CHEM 1221
CVEN 4474 Hazardous & Industrial Waste Mgmnt (Fall), prereq CVEN 3414
CVEN 4484 Intro to Environmental Microbiology, (Spring), prereqs CHEN 1211; CHEM 1221; APPM 1350, 1360 and 2350