Offerings & prerequisites are subject to change

2016-17 ECI Upper Division Course Offerings – Listed by 16-17 Curriculum Requirements

See department website for 2015-16 curriculum requirements.

**ECI Breadth & Depth Requirement:** Select 1 course from 4 breadth areas and 2 courses from 2 depth areas–>8 courses total

**Major Design Experience Requirement:** 2 courses must be from the following list: ECI 127, ECI 136, ECI 145, ECI 148B, ECI 150, ECI 162, ECI 172

**“SENIOR STANDING REQUIRED (135+ units) TO ENROLL IN MAJOR DESIGN COURSES”**

| ENVIROMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Breadth** | **Depth** | **Offerings** | **Sem** | **Prerequisites** |
| ECI 140 | Env. Analysis of Aqueous Sys. | 3 | F | CHE 2B -may only count for breadth OR depth- |
| ECI 148A* | *Water Quality Management | 4 | W | CHE 2B w/ C- or better |
| ECI 149 | Air Pollution D | 4 | F | MAT 21D & 22B; CHE 2B & ENG 103 both w/ C- or better |
| ECI 140 | Env. Analysis of Aqueous Sys. | 3 | F | CHE 2B -may only count for breadth OR depth- |
| ECI 148B | Water Qual. Mgmt. Sys. Design L | 4 | S | ENG 103, ECI 148A both w/ C- or better |
| ECI 150 | Air Pollution Cont. Sys. Design D | 4 | W | ECI 149 w/ C- or better |

| GEOTECHNICAL: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Breadth** | **Depth** | **Offerings** | **Sem** | **Prerequisites** |
| ECI 171*-171L | *Soil Mechanics & Lab | 4/1 | F | ENG 103 (MBTC); ENG 104 w/ C- or better; 171L concurrently |
| ECI 173 | Foundation Design | 4 | W | ECI 171 |
| ECI 175 | Geotechnical Earthquake Engineering | 4 | W | ECI 171 w/ C- or better |
| ECI 179 | Pavement Engineering L | 4 | F | ENG 104 w/ C- or better -may only count for one depth area- |

| STRUCTURES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Breadth** | **Depth** | **Offerings** | **Sem** | **Prerequisites** |
| ECI 130 | *Structural Analysis | 4 | W | ENG 104 w/ C- or better; MAT 22A |
| ECI 131 | Matrix Structural Analysis L | 4 | S | ENG 104 w/ C- or better; ENG 6 |
| ECI 132 | Struct. Design: Metallic Elem. | 4 | F | ECI 130 |
| ECI 135 | *Struct Design: Concrete Elem. L | 4 | W | ECI 130; Restricted to Civil Eng majors |
| ECI 136 | Building Design L | 4 | S | ECI 130 or 131; ECI 132 or 135 |

| TRANSPORTATION: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Breadth** | **Depth** | **Offerings** | **Sem** | **Prerequisites** |
| ECI 161* | Transportation System Operations D | 4 | F | MAT 21C & PHY 9A w/ C- or better – may only count for breadth or depth |
| ECI 163* | Energy/Env. Aspects of Trans. | 4 | F | ENG 106 or ECN 1A |
| ECI 165 | Transportation Policy | 3 | not offered 16-17 | offered Fall 17 |
| ECI 161* | Transportation System Operations D | 4 | F | MAT 21C & PHY 9A w/ C- or better – may only count for breadth or depth |
| ECI 162 | Transport Land Use Sustain. Design L | 4 | S | ECI 161 or 163 w/ C- or better in either |
| ECI 179 | Pavement Engineering L | 4 | F | ENG 104 w/ C- or better –may only count for one depth area- |

| WATER RESOURCES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Breadth** | **Depth** | **Offerings** | **Sem** | **Prerequisites** |
| ECI 141*-141L | *Engineering Hydraulics & Lab | 3/1 | F | ENG 103 w/ C- or better |
| ECI 142 | *Engineering Hydrology | 4 | F | ECI 141 (MBTC) |
| ECI 144 | Groundwater Systems Design | 4 | F | ECI 141 |
| ECI 145 | Hydraulic Structure Design L,D | 4 | S | ECI 141 w/ C- or better |
| ECI 146 | Water Resources Simulation D | 4 | W | ENG 103 |

| ADDITIONAL ECI COURSES (can be used as electives): |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECI 123 | Urban Systems & Sustainability | 4 | S | Upper division standing |
| ECI 125 | Building Energy Performance | 4 | not offered 16-17 | Upper division standing in Engineering |
| ECI 126 | Green Planning L | 4 | not offered 16-17 | PHY 9C; upper division standing; consent of instructor via application |
| ECI 127 | Green Design L | 4 | not offered 16-17 | ECI 126 (126 & 127 taken as a sequence) |
| ECI 137 | Construction Prin. & Proj. Mgmt. L | 4 | W | Upper division standing in Engineering; ENG 106 recommended |
| ECI 138 | Earthquake Loads on Structures D | 4 | W | ECI 130 or 131 |
| ECI 139 | Advanced Structural Mechanics | 4 | not offered 16-17 | ENG 104 w/ C- or better |
| ECI 140L | Env. Analysis of Aqueous Sys. Lab L | 1 | F | CHE 2B (or equiv.); ECI 140 (MBTC) |
| ECI 143 | Green Engr. Des. & sustainability D | 4 | W | Upper division standing; Pass 1 majors only |
| ECI 155 | Water Resources Engrg. Planning | 4 | S | ENG 106 or ECN 1A; ECI 114 |

<table>
<thead>
<tr>
<th>MATHEMATICAL ANALYSIS requirement:</th>
<th>select ONE of the following four courses</th>
<th>(4 units required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI 115</td>
<td>*Computer Methods in Civil Eng L</td>
<td>4</td>
</tr>
<tr>
<td>ECI 153</td>
<td>Deterministic Optimization &amp; Design L</td>
<td>4</td>
</tr>
<tr>
<td>MAT 118A</td>
<td>Partial Diff. Eqns: Elementary Methods</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 108</td>
<td>Appl. Stat. Methods: Regression Analy D</td>
<td>4</td>
</tr>
</tbody>
</table>

(MBTC) = Course may be taken concurrently L = Course has a Lab D = Course has a Discussion = Course open to Engineering students ONLY

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revised 3/15/2016