

## 2015-2016 Civil Engineering Design Electives

Students will need to choose from the list below to satisfy their curriculum's Civil Engineering design elective requirement. NOTE: CE 333, 334, and 460 - *These courses may be taken as either 'core' OR 'elective' CE classes...BUT they may NOT be counted twice as both a 'core' AND 'elective' on a student's curriculum. The student is responsible for checking and abiding by the ISU catalog relative to official course details, prerequisites, and narratives.*

### STRUCTURES

<b>C E 333. Structural Steel Design I</b>	(2-2) Cr. 3. F.S. Prereq: C E 332, E M 327
<b>C E 334. Reinforced Concrete Design I</b>	(2-2) Cr. 3. F.S. Prereq: C E 332, E M 327
<b>C E 436. Masonry and Timber Design</b>	(2-2) Cr. 3. Alt. F., offered odd-numbered years. Prereq: 334
<b>C E 446. Bridge Design</b>	(2-2) Cr. 3. Alt. S., offered odd-numbered years. Prereq: 333, 334
<b>C E 448. Building Design</b>	(2-2) Cr. 3. Alt. S., offered even-numbered years. Prereq: 333, 334
<b>C E 533. Structural Steel Design II</b>	(3-0) Cr. 3. Prereq: 333
<b>C E 534. Reinforced Concrete Design II</b>	(2-2) Cr. 3. Prereq: 334
<b>C E 535. Pre-Stressed Concrete Structures</b>	(3-0) Cr. 3. Prereq: 334
<b>C E 536. Masonry and Timber Design</b>	(2-2) Cr. 3. Alt. F., offered odd-numbered years. Prereq: 334
<b>C E 546. Bridge Design</b>	(2-2) Cr. 3. Alt. S., offered odd-numbered years. Prereq: 333, 334
<b>C E 548. Building Design</b>	(2-2) Cr. 3. Alt. S., offered even-numbered years. Prereq: 333, 334

### GEOTECHNICAL/MATERIALS

<b>C E 460. Foundation Engineering</b>	(3-0) Cr. 3. F.S. Prereq: C E 360
<b>C E 467. Geomaterials Stabilization</b>	(2-2) Cr. 3. F. Prereq: C E 360, C E 382 or C E 383
<b>C E 483. Pavement Analysis and Design</b>	(3-0) Cr. 3. Prereq: 360 and 382
<b>C E 484. Advanced Design of Concretes</b>	(2-2) Cr. 3. Alt. S., offered even-numbered years. Prereq: C E 382
<b>C E 561. Applied Foundation Engineering</b>	(2-3) Cr. 3. Alt. S., offered odd-numbered years. Prereq: C E 460
<b>C E 567. Geomaterials Stabilization</b>	(2-2) Cr. 3. F. Prereq: C E 360, C E 382 or C E 383
<b>C E 583. Pavement Analysis and Design</b>	(3-0) Cr. 3. Prereq: 360 and 382
<b>CE 584. Advanced Design of Concretes</b>	(2-2) Cr. 3. Alt. S., offered even-numbered years. Prereq: C E 382

### TRANSPORTATION

<b>C E 453. Highway Design</b>	(2-2) Cr. 3. F.S. Prereq: C E 306, C E 355, C E 372, C E 382
<b>C E 515. Railroad Engineering</b>	(3-0) Cr. 3. Alt. F., offered even-numbered years. Prereq: C E 355
<b>C E 552. Traffic Safety, Operations, and Maintenance</b>	(3-0) Cr. 3. Alt. S., offered even-numbered years. Prereq: C E 355
<b>C E 553. Traffic Engineering</b>	(3-0) Cr. 3. F. Prereq: C E 355
<b>C E 558. Transportation Systems Development and Management</b>	(3-0) Cr. 3. Alt. F., offered odd-numbered years. Prereq: C E 350 or C E 355

## ENVIRONMENTAL/WATER RESOURCES

<b>C E 428. Water and Wastewater Treatment Plant Design (General Option Only)</b>	(2-2) Cr. 3. S. Prereq: 326
<b>C E 473. Groundwater Hydrology</b>	(3-0) Cr. 3. F. Prereq: C E 372
<b>C E 488. Sustainable Horizontal Civil Infrastructure Systems.</b>	(3-0) Cr. 3. F. Prereq: Junior or higher classification in engineering or science
<b>C E 522. (ENSCI 522) Water Pollution Control Processes</b>	(2-2) Cr. 3. Prereq: C E 521
<b>C E 528. (ENSCI 528) Solid and Hazardous Waste Management</b>	(3-0) Cr. 3. Prereq: C E 326 or background courses in both environmental chemistry and microbiology; junior or higher standing
<b>C E 570. Applied Hydraulic Design</b>	(2-2) Cr. 3. Prereq: 372
<b>C E 573. Groundwater Hydrology</b>	(2-2) Cr. 3. Prereq: 372
<b>C E 588. Sustainable Horizontal Civil Infrastructure Systems</b>	(3-0) CE Cr. 3. F. Prereq: Junior or higher classification in engineering of science
<b>C E 594W. Construction Stormwater Management and Green Infrastructure</b>	(3-0) Cr. 3. Prereq: E M 378, ConE 241, C E 306 or permission of instructor

## MULTIDISCIPLINARY/CONSTRUCTION

<b>C E 505. Design of Construction Systems</b>	(3-0) Cr. 3. Prereq: 334, 360, CON E 322 and 340
<b>A B E 478. Wood Frame Structural Design</b>	(3-0) Cr. 3. Alt. S., offered odd-numbered years. Prereq: A B E 216, E M 324
<b>A B E 578. Wood Frame Structural Design</b>	(3-0) Cr. 3. Alt. S., offered odd-numbered years. Prereq: A B E 216, E M 324

*Approved by the C E Curriculum Committee 3/31/14*