**2018-2019 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**

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| **C E 333. Structural Steel Design I**  | (3-1) Cr. 3. F.S. Prereq: C E 332, E M 327  |
| **C E 334. Reinforced Concrete Design I** | (2-2) Cr. 3. F.S. Prereq: C E 332, E M 327 |
| **C E 446. Bridge Design**  | (2-2) Cr. 3. Alt. S., offered odd-numbered years. *Prereq: C E 333, C E 334* |
| **C E 448. Building Design** | (2-2) Cr. 3. Alt. S., offered even-numbered years. *Prereq: C E 333,**C E 334* |
| **C E 533. Structural Steel Design II** | (3-0) Cr. 3. offered irregularly. *Prereq: C E 333* |
| **C E 534. Reinforced Concrete Design II** | (2-2) Cr. 3. offered irregularly. *Prereq: C E 334* |
| **C E 535. Pre-Stressed Concrete Structures** | (3-0) Cr. 3. offered irregularly. *Prereq: C E 334* |
| **C E 546. Bridge Design** | (2-2) Cr. 3. Alt. S., offered odd-numbered years. *Prereq: C E 333,**C E 334* |
| **C E 548. Building Design** | (2-2) Cr. 3. Alt. S., offered even-numbered years. *Prereq: C E 333,**C E 334* |

**GEOTECHNICAL/MATERIALS**

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| **C E 460. Foundation Engineering** | (3-0) Cr. 3. F.S. *Prereq:* [*C E 360*](http://catalog.iastate.edu/azcourses/c_e/) |
| **C E 467. Geomaterials Stabilization** | (2-2) Cr. 3. S. Prereq: C E 360, C E 382 or C E 383 |
| **C E 483. Pavement Analysis and Design** | (3-0) Cr. 3. S. *Prereq: C E 360 and C E 382* |
| **C E 484. Advanced Design of Concretes** | (2-3) Cr. 3. offered irregularly. Prereq: C E 382 |
| **C E 561. Applied Foundation Engineering** | (3-0) Cr. 3. offered irregularly. Prereq: C E 460 |
| **C E 567. Geomaterials Stabilization** | (2-2) Cr. 3. S. Prereq: C E 360, C E 382 or C E 383 |
| **C E 583. Pavement Analysis and Design** | (3-0) Cr. 3. S. *Prereq: C E 360 and C E 382* |
| **C E 584. Advanced Design of Concretes** | (2-3) Cr. 3. offered irregularly. Prereq: C E 382 |

**TRANSPORTATION**

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| **C E 453. Highway Design** | (2-2) Cr. 3. F. Prereq: C E 306, C E 355 |
| **C E 552. Traffic Safety, Operations, and Maintenance** | (3-0) Cr. 3. Alt. S., offered even-numbered years. Prereq: C E 355 |
| **C E 553. Traffic Engineering** | (3-0) Cr. 3. F. Prereq: C E 355 |
| **C E 558. Transportation Systems Development and Management** | (3-0) Cr. 3. Alt. F., offered odd-numbered years. Prereq: C E 355 |

**ENVIRONMENTAL/WATER RESOURCES**

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| **C E 428. Water and Wastewater Treatment Plant Design** ***(General Option Only)*** | (2-2) Cr. 3. S. *Prereq: C E 326* |
| **C E 473. Groundwater Hydrology** | (3-0) Cr. 3. F. Prereq: C E 372 |
| **C E 488. Sustainable Horizontal Civil Infrastructure Systems.** | (3-0) Cr. 3. F. Prereq: Junior or higher classification in engineering or science |
| **C E 522. (ENSCI 522) Water Pollution Control Processes**  | (2-2) Cr. 3. *Prereq:*[*C E 521*](http://catalog.iastate.edu/collegeofengineering/civilengineering/) |
| **C E 528. (ENSCI 528) Solid and Hazardous Waste Management**   | (3-0) Cr. 3. Offered irregularly. Prereq: C E 326 or background courses in both environmental chemistry and microbiology; junior or higher standing |
| **C E 570. Applied Hydraulic Design** | (2-2) Cr. 3. Alt. F., offered odd-numbered years. *Prereq: C E 372* |
| **C E 573. Groundwater Hydrology** | (3-0) Cr. 3. F. *Prereq: C E 372* |
| **C E 588. Sustainable Horizontal Civil Infrastructure Systems** | (3-0) Cr. 3. F. Prereq: Junior or higher classification in engineering or science |

**MULTIDISCIPLINARY/CONSTRUCTION**

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| **C E 505. Design of Construction Systems** | (3-0) Cr. 3. F. *Prereq: C E 333, C E 360,* [*CON E 322*](http://catalog.iastate.edu/collegeofengineering/civilengineering/) *and CON E 340*  |
| **A B E 478. Wood Frame Structural Design** | (3-0) Cr. 3. Alt. S., offered odd-numbered years. Prereq: E M 324, M E 231 |
| **A B E 578. Wood Frame Structural Design** | (3-0) Cr. 3. Alt. S., offered odd-numbered years. Prereq: E M 324, M E 231 |

*Approved by the C E Curriculum Committee*