**2024-2025 Civil Engineering Design Electives**

Students will need to choose from the list below to satisfy their curriculum’s Civil Engineering design elective requirement.

**NOTE:** Courses that appear on multiple lists may NOT be double counted.

The student is responsible for checking and abiding by the ISU catalog relative to official course details, prerequisites, and narratives.

**Shape**

**STRUCTURES**

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| **CE 3330 Structural Steel Design I** | (3-1) Cr. 3. F.S. Prereq: CE 3320 and EM 3270 |
| **CE 3340 Reinforced Concrete Design I** | (3-1) Cr. 3. F.S. Prereq: CE 3320 and EM 3270 |
| **CE 4460 Bridge Design** | (2-2) Cr. 3. Alt. S, offered odd-numbered years.  Prereq: CE 3330 and CE 3340 |
| **CE 4480 Building Design** | (2-2) Cr. 3. Alt. S, offered even-numbered years.  Prereq: CE 3330 and CE 3340 |
| **CE 5330 Structural Steel Design II** | (3-0) Cr. 3. Offered irregularly. Prereq: CE 3330 |
| **CE 5340 Reinforced Concrete Design II** | (3-0) Cr. 3. Offered irregularly. Prereq: CE 3340 |
| **CE 5350 Pre-Stressed Concrete Structures** | (3-0) Cr. 3. Offered irregularly. Prereq: CE 3340 |
| **CE 5460 Bridge Design** | (2-2) Cr. 3. Alt. S, offered odd-numbered years.  Prereq: CE 3330 and CE 3340 |
| **CE 5480 Building Design** | (2-2) Cr. 3. Alt. S, offered even-numbered years.  Prereq: CE 3330 and CE 3340 |

**GEOTECHNICAL/MATERIALS**

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| **CE 4600 Foundation Engineering** | (3-0) Cr. 3. F.S. Prereq: CE 3600 |
| **CE 4670 Geomaterials Stabilization** | (2-2) Cr. 3. Offered irregularly.  Prereq: CE 3600 and (CE 3820 or CE 3830) or instructor permission |
| **CE 4830 Pavement Analysis and Design** | (3-0) Cr. 3. S. Prereq: CE 3600 and CE 3820 |
| **CE 4840 Advanced Design of Concretes** | (2-3) Cr. 3. Offered irregularly. Prereq: CE 3820 |
| **CE 5610 Applied Foundation Engineering** | (3-0) Cr. 3. Offered irregularly.  Prereq: CE 4600 or instructor permission |
| **CE 5670 Geomaterials Stabilization** | (2-2) Cr. 3. Offered irregularly.  Prereq: CE 3600 and (CE 3820 or CE 3830) or instructor permission |
| **CE 5830 Pavement Analysis and Design** | (3-0) Cr. 3. S. Prereq: CE 3600 and CE 3820 |
| **CE 5840 Advanced Design of Concretes** | (2-3) Cr. 3. Offered irregularly. Prereq: CE 3820 |

**TRANSPORTATION**

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| **CE 4530 Highway Design** | (2-2) Cr. 3. F. Prereq: CE 3060 and CE 3550 |
| **CE 5520 Traffic Safety, Operations, and Maintenance** | (3-0) Cr. 3. Alt. S, offered even numbered years.  Prereq: CE 3550 |
| **CE 5530 Traffic Engineering** | (3-0) Cr. 3. F. Prereq: CE 3550 |
| **CE 5580 Transportation Systems Development and Management** | (3-0) Cr. 3. Offered irregularly. Prereq: CE 3550 |

**ENVIRONMENTAL/WATER RESOURCES**

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| **CE 4280 (ENVE) Water and Wastewater Treatment Plant Design *(General Option Only)*** | (3-0) Cr. 3. S. Prereq: CE 3260 |
| **CE 4730 Groundwater Hydrology** | (3-0) Cr. 3. F. Prereq: CE 3720 |
| **CE 5220 (ENSCI) Water Pollution Control Processes** | (2-2) Cr. 3. Offered irregularly. Prereq: CE 4210 or CE 5210 |
| **CE 5280 (ENSCI) Solid and Hazardous Waste Management** | (2-2) Cr. 3. Offered irregularly. Prereq: CE 3260 and junior or high standing |
| **CE 5700 Applied Hydraulic Design** | (3-0) Cr. 3. Alt. F, offered odd-numbered years.  Prereq: CE 3720 |
| **CE 5710 (ENSCI) Surface Water Hydrology** | (3-0) Cr. 3. S. Prereq: CE 3720 |
| **CE 5730 (ENSCI) Groundwater Hydrology** | (3-0) Cr. 3. F. Prereq: CE 3720 |

**MULTIDISCIPLINARY/CONSTRUCTION**

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| **CE 5050 Design of Construction Systems** | (3-0) Cr. 3. Offered irregularly. Prereq: CE 3330 and CE 3600 and CONE 3220 and CONE 3400 |
| **ABE 4780 Wood Frame and Agri-Industrial**  **Structures** | (3-0) Cr. 3. Alt. S, offered odd-numbered years.  Prereq: EM 3240 |
| **ABE 5780 Wood Frame and Agri-Industrial**  **Structures** | (3-0) Cr. 3. Alt. S, offered odd-numbered years.  Prereq: EM 3240 |

*Approved by the C E Curriculum Committee*