

Table 1. Connection of Criterion 8 CE Outcomes to CE Courses
(required, **design elective**, *advanced elective*)

| Criterion 8 CE Outcomes | Course(s) | Topics |
|--|---|---|
| (a) Proficiency in Structural Engineering | CE 2301 CE 3303 CE 3440 CE 3341 <i>CE 4340</i> CE 4342 CE 4343 | 2-D and 3-D load analyses Effects of loads on members 2-D and 3-D structural analyses Structural design principles Matrix methods for analyses Codes and methods for steel design Reinforced concrete design |
| (b) Proficiency in Geotechnical Engineering | CE 3321 CE 4321 | Introductory soil mechanics Geotechnical design |
| (c) Proficiency in Environmental Engineering | CE 3309 ENVE 4307 ENVE 4391 ENVE 4399 | Water, wastewater, air, solid waste Physical and chemical treatment Advanced water treatment Biological wastewater treatment |
| (d) Proficiency in Water Resources Engineering | CE 3305 CE 3354 CE 3372 CE 4353 <i>CE 4363</i> | Introductory fluid mechanics Surface and groundwater hydrology Stormwater, water, wastewater systems Water conveyance systems Groundwater quantity and quality |
| (e) Conduct Laboratory Experiments, Interpret Data | CE 2101 CE 3103 CE 3105 CE 3121 CE 3171 | Construction materials behaviors Material properties, stress, strain, fatigue Fluid properties, energy, flow conditions Soil properties and behaviors Water and wastewater analyses |
| (f) Perform Civil Engineering Design | CE 3309 CE 3341 CE 3354 CE 3372 CE 4321 CE 4330 CE 4342 CE 4343 CE 4361 ENVE 4307 ENVE 4391 ENVE 4399 | Sizing of basic treatment basins and flows Structural design principles with various materials Design of systems for water supply and flood control Design of gravity and pressure pipe networks Design of foundations, soil preparation Capstone design project Design of steel structures, members, and connections Design of reinforced concrete members and systems Design of traffic flow, pavement systems, layouts Design of physical and chemical treatment systems Design of advanced water treatment systems Design of biological wastewater treatment systems |
| (g) Understanding of Professional Practice Issues | CE 3321 CE 3341 CE 3372 CE 4101 CE 4292 CE 4321 CE 4330 CE 4342 CE 4361 <i>CE 4363</i> | Importance of site investigation, proper testing Importance of design codes, material costs Design regulations, economic choices, cost opinions Review for first licensing exam Ethics and professionalism Soil testing and design codes for foundations Design codes and regulations, cost opinions Design codes and construction practices Design codes and construction practices Regulations, interaction with other professionals |