

Breadth and Depth Required Electives

Civil Engineering students must take a total of 6 breadth and depth electives.

Breadth Requirement:

Take one course in four of the six sub-discipline areas listed below.

Depth Requirement:

Take two additional courses in the sub-discipline areas in which you have already taken courses.

- 1) You can either take two additional courses in one of the four sub-discipline areas in which you have already taken one course.
- 2) Or, you can take one additional course in one of the sub-discipline areas in which you have already taken a course and an additional course in a second sub-discipline area in which you have already taken a course.

Breadth and Depth Electives by Sub-Discipline

Sub-Discipline	Number of Credits	Semester Offered	Design Component
<i>Construction</i>			
455 Engineering Project Management	3	Fall	
473/573 Construction Law	3	Spring	
474/574 Principles of Written Construction Documents	3	Fall	
475/575 Construction Safety	3	Spring	
477/577 Project Controls	3	Fall	
478/578 Design of Temporary Support Structures	3	Fall	Yes
491/571 Sustainable Design & Construction	3	Spring	
491/598 Special Topics – Building Info Modeling (BIM)	3	Spring	
<i>Environmental</i>			
433/533 Engineering Microbiology	3	Spring	
435/535 Water Reuse	3		
436/536 Biological Wastewater Treatment	3	Fall	
437L/537L Aqueous Environmental Chemistry & Analysis	3	Spring	
491/531 Physical/Chemical Water Treatment Process	3	Spring	

428/538 Sustainable Engineering	3	Fall	
539 Radioactive Waste Management	3	Fall	
<i>Geotechnical</i>			
462/562 Foundation Engineering I	3	Fall	Yes
463/563 Earth Structures	3	Fall	Yes
466/566 Pavement Design	3	Spring	Yes
567 Foundation Engineering II	3	Spring	
<i>Structures</i>			
411/511 Reinforced Concrete Design	3	Spring	Yes
413/513 Timber & Masonry Design	3	Spring	
424/524 Structural Design in Metals	3	Fall	Yes
521 Struc Dynam & Earthquake Engr	3	Spring	
448/548 Fuzzy Logic	3	Fall	
<i>Transportation</i>			
481/581 Urban Transportation Planning	3	Fall	Yes
482/582 Highway & Traffic Engineering	3	Spring	Yes
491 Design of Sustainable Transportation Systems & Pol	3	Spring	
<i>Water Resources</i>			
440/540 Design of Hydraulic Systems	3	Spring	Yes
441/541 Hydrogeology	3	Fall	
442 Hydraulic Engineering & Hydrology	3	Fall	
547 GIS – Water Resources	3	Spring	
598 Hydrologic Modeling Pra	3	Spring	